

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.97  
Test oil : ISO 4113

Combination No. : 0 402 646 968

Injection pump  
Pump designation : PE6P120A320RS7248  
EP type number : 0 412 626 900

Governor  
Governor design. : RQV275...1150PA986  
Governor no. : 0 421 813 920

Cust. part No. : 1248033/6

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Customer-spec. information  
Customer : DAF  
Motor : RS 222 L  
Power KW : 222.0

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## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

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## BASIC SETTING

Rated speed rpm : 1000

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Rack travel in mm : 12.25  
Tolerance mm : ± 0.05

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Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.0

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Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Speed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.70  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 16.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Speed

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1207  
guide sleeve  
travel mm : 8.25  
Tolerance mm : + 0.25

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.45  
Tolerance mm : + 0.15

Rated speed rpm : 800  
guide sleeve  
travel mm : 5.21  
Tolerance mm : + 0.25

Rated speed rpm : 315  
guide sleeve  
travel mm : 1.98  
Tolerance mm : + 0.25

Rated speed rpm : 385

guide sleeve  
travel mm : 2.52  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.07  
Tolerance mm : + 0.25

Rated speed rpm : 1500  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1325

Rack travel in mm : 11.20  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 187.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 4.0  
Speed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 11.25  
Rated speed rpm : 1207  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1320  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1450

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#### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 175

CRT mm min. :  $>$  6.70

Rated speed rpm : 340

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#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1150  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.10

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#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 600  
Pressure hPa : 420  
rack travel mm : 11.65

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Tolerance mm :  $\pm$  0.05

Pressure hPa : 240  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.10

Start interlock

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#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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#### LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 03.02.97  
Test oil : ISO 4113

Combination No. : 0 402 646 969

Injection pump  
Pump designation : PE6P120A320RS7248  
: Z  
EP type number : 0 412 626 901

Governor  
Governor design. : RQV275...1150PA986  
Governor no. : 0 421 813 920

Cust. part No. : 1248041/4

Customer-spec. information  
Customer : DAF  
Motor : RS 200 L  
Power KW : 200.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.70  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1335

Rack travel in mm : 10.30  
Tolerance mm : ± 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 10.35  
Rated speed rpm : 1182  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1290  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

#### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 340

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.35  
Tolerance mm : ± 0.05

Rated speed rpm : 1150  
rack travel mm : 11.35  
Tolerance mm : ± 0.10

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

MEASUREMENT

Rated speed rpm : 600  
Pressure hPa : 340  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 200  
rack travel mm : 9.70  
Tolerance mm :  $\pm$  0.10

Start interlock

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 0 402 646 970

Injection pump  
Pump designation : PE6P120A32ORS7248  
: Y  
EP type number : 0 412 626 902

Governor  
Governor design. : RQV275...1150PA986  
Governor no. : 0 421 813 920

Cust. part No. : 1248046/4

Customer-spec. information  
Customer : DAF  
Motor : RS 180 L  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

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Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.70  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206  
guide sleeve  
travel mm : 8.25  
Tolerance mm : + 0.20

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.44  
Tolerance mm : + 0.15

Rated speed rpm : 799  
guide sleeve  
travel mm : 5.21  
Tolerance mm : + 0.25

Rated speed rpm : 315  
guide sleeve  
travel mm : 1.98  
Tolerance mm : + 0.25

Rated speed rpm : 365  
guide sleeve  
travel mm : 2.52  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.07  
Tolerance mm : + 0.25

Rated speed rpm : 1500  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1340

Rack travel in mm : 9.70  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 9.75  
Rated speed rpm : 1182  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1280  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1450

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#### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 175

CRT mm min. :  $>$  7.40

Rated speed rpm : 340

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#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1150  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.10

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#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 260  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 190

rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

#### Start interlock

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#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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#### LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 03.02.97  
Test oil : ISO 4113

Combination No. : 0 402 648 781

Injection pump  
Pump designation : PE8P120A320LS7906  
EP type number : 0 412 628 921

Governor  
Governor design. : RQV300...1050PA1330K  
Governor no. : 0 421 815 547

Cust. part No. : 0422 3946 KY

## Customer-spec. information

Customer : KHD  
Motor : BF8M1015/C  
Power KW : 400.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 210  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 5  
: - 3- 1

Phasing : 0-45-90-135-180  
: -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 315.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.20  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 360.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.01  
Tolerance mm : + 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.60  
Tolerance mm : + 0.20

Rated speed rpm : 794  
guide sleeve  
travel mm : 6.85  
Tolerance mm : + 0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 4.02  
Tolerance mm : + 0.25

Rated speed rpm : 1340  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1165

Rack travel in mm : 13.20  
Tolerance mm : + 2.70

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 360.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 122.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 13.20  
Rated speed rpm : 1080  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

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## LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm max. :  $>$  6.30

Rated speed rpm : 350

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## TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 600  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 450  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.25

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## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1600  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 1050  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.20

### MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 500  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 800  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

### Start interlock

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## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

## LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 0 402 676 832

Injection pump  
Pump designation : PE6P120A320LS7898  
EP type number : 0 412 626 957

Governor  
Governor design. : RSV350...1000POA648  
Governor no. : 0 421 833 565

Cust. part No. : 0270748202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 A  
Power KW : 170.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.75  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 172.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

Rated speed rpm	: 350
Rack travel in mm	: 5.00
Tolerance mm	: ± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 19.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 6.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance cm <sup>3</sup> /1000S.	: 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 4.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 980
-----------------	-------

Aneroid pressure hPa	: 1000
Del. quantity cm <sup>3</sup> /1000 strokes	: 172.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

#### CONTROL LEVER

control lever position degree	: 93.0
tolerance degree	: ± 4.0

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 1030
rack travel mm	: 10.70
Rated speed rpm	: 1080
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1300

Rated speed rpm	: 1031
rack travel mm	: 10.70

Rated speed rpm	: 1081
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1300

Rated speed rpm	: 1032
rack travel mm	: 10.70

Rated speed rpm	: 1082
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1300

Rated speed rpm : 1033  
rack travel mm : 10.70

Rated speed rpm : 1083  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1300

Rated speed rpm : 1034  
rack travel mm : 10.70

Rated speed rpm : 1084  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1300

Rated speed rpm : 1035  
rack travel mm : 10.70

Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1300

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100

CRT mm min. :  $>$  19.50

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

#### TORQUE CONTROL

Rated speed rpm : 980  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 400  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.15

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.05  
Tolerance mm :  $\pm$  0.15

#### MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 400  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.15

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
 cm3/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

Aneroid pressure  
 hPa : 350  
 Rated speed rpm : 400  
 Del. quantity  
 cm3/1000 strokes : 131.0  
 Tolerance  
 cm3/1000 strokes : + 1.0  
 Check tolerance  
 cm3/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 8.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm3/1000 strokes : 136.0  
 Tolerance  
 cm3/1000 strokes : + 1.0  
 Check tolerance  
 cm3/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm3/1000 strokes : 180.0  
 Tolerance  
 cm3/1000 strokes : + 10.0  
 Check tolerance  
 cm3/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 350  
 Del. quantity  
 cm3/1000 strokes : 19.0  
 Tolerance  
 cm3/1000 strokes : + 3.0  
 Check tolerance  
 cm3/1000S. : + 6.0

Spreed  
 Tolerance  
 cm3/1000 strokes : 6.0  
 Check tolerance  
 cm3/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 0 402 678 831

Injection pump  
Pump designation : PE8P120A320LS7901  
EP type number : 0 412 628 918

Governor  
Governor design. : RSV350...1050POA651  
Governor no. : 0 412 833 568

Cust. part No. : 0270745602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442LA  
Power KW : 297.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 4- 1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

---

Check tolerance  
cm3/1000S. : + 4.5

---

Spread

Tolerance  
cm3/1000 strokes : 5.0

---

Check tolerance  
cm3/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.50

Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 19.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spread

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm3/1000 strokes : 210.0  
Tolerance  
cm3/1000 strokes : + 1.5  
Check tolerance  
cm3/1000S. : + 4.5  
Spread

Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 90.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80  
Rated speed rpm : 1075  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1150  
Tolerance 1/min : + 5

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1400

---

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 1030  
rack travel mm : 13.40  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Pressure hPa : 500  
rack travel mm : 2.30  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 250  
rack travel mm : 0.35  
Tolerance mm :  $\pm$  0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.02.97  
Test oil : ISO 4113  
Combination No. : 0 402 690 801  
Injection pump  
Pump designation : PE12P120A520LS7907  
EP type number : 0 412 620 849  
Governor  
Governor design. : RE30  
Governor no. : 0 421 890 041

Cust. part No. : 0260745202

Customer-spec. information  
Customer : MTU  
Motor : 12V183TE52K  
Power KW : 846.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1/3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 077  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8  
                  : - 4- 11- 10- 2  
                  : - 7

Phasing : 0-45-60-105-120  
          : -180-225-240-285  
          : -345

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 12

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1200  
Uact V : 3.100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 313.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750  
Uact V : 3.100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 353.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 8.0

#### TEST POINT L1

Rated speed rpm : 300  
Uact V : 1.350  
Tolerance Volt : +/- 0.060  
Check tolerance  
Volt : +/- 0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 3.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 445.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  24.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.01.97  
Test oil : ISO 4113  
Combination No. : 0 402 899 300  
Injection pump  
Pump designation : PE10P120A520LS8519  
EP type number : 0 412 829 201

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 036

Cust. part No. : 51.11103-7560

Customer-spec. information  
Customer : MAN  
Motor : D 2840 LF 20  
Power KW : 441.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.95  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 10- 9- 4- 1- 8  
                  : - 6- 3- 5- 2

Phasing : 0-45-72-117-144  
          : -216-261-288-333  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

## Start of delivery blocking

Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 10

## (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

# TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(ALL P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

Rated speed rpm : 950  
Uact V : 3.100  
Del. quantity  
cm3/1000 strokes : 270.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000S. : +/- 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750  
Uact V : 1.480  
Del. quantity  
cm3/1000 strokes : 87.0  
Tolerance  
cm3/1000 strokes : +/- 5.0  
Check tolerance  
cm3/1000S. : +/- 9.0  
Spreed  
Check tolerance  
cm3/1000S. : 12.0

Rated speed rpm : 750  
Uact V : 3.100  
Del. quantity  
cm3/1000 strokes : 291.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0

### TEST POINT L1

Rated speed rpm : 300

Uact V : 1.540  
Tolerance Volt :  $\pm$  0.060  
Check tolerance  
Volt :  $\pm$  0.080  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 2.440  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  8.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113  
Combination No. : 0 403 476 150  
Injection pump  
Pump designation : PES6MW100/72ORS1131  
: 1  
EP type number : 0 413 406 165  
Governor  
Governor design. : RSV350...1200MWOA404  
Governor no. : 0 420 085 297  
Cust. part No. : 0270742602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 171.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

A27

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 1.50  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1180  
Rack travel in mm : 14.45  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed

Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.00

Tolerance mm : ± 0.10

Del. quantity  
cm3/1000 strokes : 12.0

Tolerance  
cm3/1000 strokes : ± 2.0

Check tolerance  
cm3/1000S. : ± 4.5

Spread  
Tolerance

cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm3/1000 strokes : 112.0  
Tolerance  
cm3/1000 strokes : ± 1.0  
Check tolerance  
cm3/1000S. : ± 3.0  
Spread  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 6.0

#### CONTROL LEVER

control lever  
position degree : 103.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1480

rack travel mm : 4.00  
Rated speed rpm : 1345

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1230  
rack travel mm : 13.45

Rated speed rpm : 1314  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

Rated speed rpm : 1231  
rack travel mm : 13.45

Rated speed rpm : 1315  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

Rated speed rpm : 1232  
rack travel mm : 13.45

Rated speed rpm : 1316  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

Rated speed rpm : 1233  
rack travel mm : 13.45

Rated speed rpm : 1317  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

Rated speed rpm : 1238  
rack travel mm : 13.45

Rated speed rpm : 1322  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

Rated speed rpm : 1239  
rack travel mm : 13.45

Rated speed rpm : 1323  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

---

#### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1180  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 500  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 350  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 350

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.02.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 076 814  
  
Injection pump  
Pump designation : PES6P120B320RS3382  
EP type number : 0 412 026 803  
  
Governor  
Governor design. : RSV425...1100POA669  
Governor no. : 0 421 833 572

Cust. part No. : 836354708

Customer-spec. information  
Customer : SISU  
Motor : 645 DSIE  
Power KW : 200.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700  
  
Rack travel in mm : 12.20  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 425

Rack travel in mm : 4.80

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1225  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1330

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 425  
rack travel mm : 4.30  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 425  
rack travel mm : 4.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 490  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.20  
Tolerance mm : + 0.05

Rated speed rpm : 1100  
rack travel mm : 11.80  
Tolerance mm : + 0.10

Rated speed rpm : 825  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 940  
rack travel mm : 2.50  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 470  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 425  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.02.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 640  
  
Injection pump  
Pump designation : PE6P120A320RS7311  
EP type number : 0 412 626 932  
  
Governor  
Governor design. : RQV275...1150PA1110K  
Governor no. : 0 421 815 375

Cust. part No. : 1280143/7

## Customer-spec. information

Customer : DAF  
Motor : RS 222 M  
Power KW : 222.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1130  
  
Rack travel in mm : 13.55  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0

Tolerance	
cm3/1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm3/1000S.	: + 4.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm3/1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm3/1000S.	: 9.0
<hr/>	

Rated speed rpm	: 275
<hr/>	
Rack travel in mm	: 3.80
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 16.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1203
guide sleeve	
travel mm	: 10.07
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.56
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 814
guide sleeve	
travel mm	: 6.79
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 300
guide sleeve	
travel mm	: 2.13
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 350

guide sleeve	
travel mm	: 2.90
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 460
guide sleeve	
travel mm	: 3.90
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1480
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1280
<hr/>	
Rack travel in mm	: 12.80
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1130
Aneroid pressure	
hPa	: -
Del. quantity	
cm3/1000 strokes	: 218.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 121.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 12.55
Rated speed rpm	: 1192
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1315
Tolerance 1/min	: + 15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1450

---

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 3.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 330  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 175

CRT mm min. :  $>$  6.00

---

#### TORQUE CONTROL

Rated speed rpm : 1130  
rack travel mm : 13.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 850  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 775  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1130  
Pressure hPa : 1500

rack travel mm : 13.55  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 1130  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 1130

Pressure hPa : 580  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 320  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### LOW IDLE

Rated speed rpm : 275

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.97  
Test oil : ISO 4113

Combination No. : 0 400 846 492

Injection pump  
Pump designation : PES6A90D410RS2569  
EP type number : 0 410 896 071

Governor  
Governor design. : RQV300...1400AB1111  
: 2L  
Governor no. : 0 420 212 156

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 352  
Power KW : 88.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 8.30

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

#### CONTROL LEVER

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 8.80  
Rated speed rpm : 1445  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1545  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1630

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 8.30  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 580  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 9.80

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 9.85  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 10.85  
Tolerance mm : ± 0.05

Rated speed rpm : 630  
rack travel mm : 10.70  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 10.15  
Tolerance mm :  $\pm$  0.15

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 48.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 846 558  
Injection pump  
Pump designation : PES6A90D410RS2667  
EP type number : 0 410 896 080  
Governor  
Governor design. : RQV300...1300AB1065  
: 8L  
Governor no. : 0 420 212 200  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 366  
Power KW : 97.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 1.5  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 11.25  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

Rated speed rpm : 300

Rack travel in mm : 9.20

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Dimension a mm : 1.00

Rated speed rpm : 1500

guide sleeve  
travel mm : 8.55

Tolerance mm : ± 0.05

Rated speed rpm : 300

guide sleeve  
travel mm : 1.05

Tolerance mm : ± 0.25

Rated speed rpm : 500

guide sleeve  
travel mm : 2.55

Tolerance mm : ± 0.25

Rated speed rpm : 750

guide sleeve  
travel mm : 4.20

Tolerance mm : ± 0.10

##### GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

##### CONTROL LEVER

control lever

position degree : 115.0

tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 10.20

Rated speed rpm : 1345

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1480

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1600

##### LOW IDLE

control lever

position degree : 80.0

tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300

rack travel mm : 9.20

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.60

Rated speed rpm : 588

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.25  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 11.80  
Tolerance mm : + 0.10

Rated speed rpm : 1100  
rack travel mm : 11.45  
Tolerance mm : + 0.15

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.10  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.02.97  
Test oil : ISO 4113

Combination No. : 0 400 846 563

Injection pump  
Pump designation : PES6A90D410RS2667  
EP type number : 0 410 896 080

Governor  
Governor design. : RQV300...1200AB1065  
: 15L  
Governor no. : 0 420 212 210

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 366  
Power KW : 92.0

## TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 9.00

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1260

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### CONTROL LEVER

control lever  
position degree : 113.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 10.10  
Rated speed rpm : 1245  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1345  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1500

#### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 9.00  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.30

Rated speed rpm : 610

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.10  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 12.45  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 11.60

Tolerance mm :  $\pm$  0.15

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.20  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : 0 400 863 020

Injection pump  
Pump designation : PES3A95D410/3RS2905  
EP type number : 0 410 893 996

Governor  
Governor design. : RSV325...1250A5C858L  
Governor no. : 0 420 232 621

Cust. part No. : 0423 1592 KY

## Customer-spec. information

Customer : KHD-DMI  
Motor : F3L912/913\_NEU  
Power KW : 40.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 11.5

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Spread  
Tolerance  
cm3/1000 strokes : 5.5

Check tolerance  
cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 76.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 3.0  
Spread  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 473  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.02.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 863 021  
  
Injection pump  
Pump designation : PES3A95D410/3RS2905  
EP type number : 0 410 893 996  
  
Governor  
Governor design. : RSV325...900A1C859L  
Governor no. : 0 420 232 622

Cust. part No. : 0423 1593 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F3L912/913\_NEU  
Power KW : 40.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 67

REMA (KS)

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 3- 2  
  
Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 11.80  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 7.90

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 90.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.80  
Rated speed rpm : 895  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 920  
Tolerance 1/min : ± 10

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1090

rack travel mm : 4.00  
Rated speed rpm : 940

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 7.40  
Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 7.90  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 863 022  
Injection pump  
Pump designation : PES3A95D410/3RS2905  
EP type number : 0 410 893 996  
Governor  
Governor design. : RSV325...1250A5C860L  
Governor no. : 0 420 232 623

Cust. part No. : 0423 1730 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F3L912/913\_NEU  
Power KW : 44.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 3- 2  
Phasing : 0-120-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 11.35  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

---

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 473  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.02.97  
Test oil : ISO 4113

Combination No. : 0 400 863 023

Injection pump  
Pump designation : PES3A95D410/3RS2905  
EP type number : 0 410 893 996

Governor  
Governor design. : RSV325...1250A5C861L  
Governor no. : 0 420 232 624

Cust. part No. : 0423 1731 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F3L912/913\_NEU  
Power KW : 44.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm3/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 11.5

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Speed  
Tolerance  
cm3/1000 strokes : 5.5

Check tolerance  
cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 76.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 3.0  
Speed  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

---

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 473  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 874 226  
Injection pump  
Pump designation : PES4A90D410RS2570  
EP type number : 0 410 894 023  
Governor  
Governor design. : RSV350...1400A0C2070  
: L  
Governor no. : 0 420 232 400  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 314  
Power KW : 62.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

C03

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 2.30  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1380  
Rack travel in mm : 11.95  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 62.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance cm <sup>3</sup> /1000S.	:	4.5
--	---	-----

---

Rated speed rpm	:	350
Rack travel in mm	:	8.90
Tolerance mm	:	± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	:	9.0
Tolerance cm <sup>3</sup> /1000 strokes	:	± 4.0
Check tolerance cm <sup>3</sup> /1000S.	:	± 6.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	2.0
Check tolerance cm <sup>3</sup> /1000S.	:	4.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
Rack travel in mm	:	0.65
Tolerance mm	:	± 0.35

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1380
Aneroid pressure hPa	:	-
Del. quantity cm <sup>3</sup> /1000 strokes	:	62.0
Tolerance cm <sup>3</sup> /1000 strokes	:	± 0.5
Check tolerance cm <sup>3</sup> /1000S.	:	± 2.5
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	3.0
Check tolerance cm <sup>3</sup> /1000S.	:	4.5

---

CONTROL LEVER

control lever position degree	:	57.0
tolerance degree	:	± 4.0

RATED SPEED

rack travel mm	:	10.90
Rated speed rpm	:	1425
Tolerance 1/min	:	± 5

rack travel mm	:	4.00
Rated speed rpm	:	1495
Tolerance 1/min	:	± 10

rack travel mm	:	1.00
Tolerance mm	:	± 0.70
Rated speed rpm	:	1550

---

LOW IDLE

control lever position degree	:	26.0
tolerance degree	:	± 4.0

Testing:

Rated speed rpm	:	350
rack travel mm	:	8.90
Tolerance mm	:	± 0.10
rack travel mm	:	2.00
Rated speed rpm	:	465
Tolerance 1/min	:	± 30

---

TORQUE CONTROL

Rated speed rpm	:	1380
rack travel mm	:	11.95
Tolerance mm	:	± 0.05

Rated speed rpm	:	600
rack travel mm	:	12.65
Tolerance mm	:	± 0.05

Rated speed rpm	:	900
rack travel mm	:	12.30
Tolerance mm	:	± 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 54.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 874 243  
Injection pump  
Pump designation : PES4A90D410RS2666  
EP type number : 0 410 894 029  
Governor  
Governor design. : RSV350...1200A2C1139  
: -2L  
Governor no. : 0 420 232 471  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364  
Power KW : 50.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

C06

x inside diameter : 1.5  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 2.30  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 9.45  
Tolerance mm : + 0.05  
Del. quantity  
cm3/1000 strokes : 49.5  
Tolerance  
cm3/1000 strokes : + 0.5  
Check tolerance  
cm3/1000S. : + 2.5  
Speed  
Tolerance  
cm3/1000 strokes : 3.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

### (3) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension,  
click setting x : 5.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

#### CONTROL LEVER

C07

control lever  
position degree : 103.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1530

rack travel mm : 4.00  
Rated speed rpm : 1338

---

#### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 8.40  
Tolerance mm : + 0.10

#### Testing:

rack travel mm : 2.00  
Rated speed rpm : 560  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 9.45  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 10.55  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 10.40  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
rack travel mm : 9.85  
Tolerance mm : + 0.15

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 46.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 16.40  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 874 244  
Injection pump  
Pump designation : PES4A90D410RS2666  
EP type number : 0 410 894 029  
Governor  
Governor design. : RSV350...1200A2C1139  
: -3L  
Governor no. : 0 420 232 472  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364  
Power KW : 57.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 015  
Outside diameter : 6.0

C09

x inside diameter : 1.5  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 10.55  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 54.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
cm<sup>3</sup>/1000s. : 5.0

---

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 4.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 4.70

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 54.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.0

---

CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1450

rack travel mm : 4.00  
Rated speed rpm : 1346

rack travel mm : 9.50  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

---

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 8.60  
Tolerance mm : + 0.10

Testing:

rack travel mm : 2.00  
Rated speed rpm : 550  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 10.55  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 11.80  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
rack travel mm : 11.15  
Tolerance mm : + 0.15

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 16.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 876 108  
Injection pump  
Pump designation : PES6A80D41ORS2085X  
EP type number : 0 410 886 045  
Governor  
Governor design. : RSV350...1400A2C1001  
: L  
Governor no. : 0 420 232 464  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM352  
Power KW : 66.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1400  
Rack travel in mm : 8.55  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 2.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : 3.5

Rated speed rpm : 350

Rack travel in mm : 7.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : 3.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Dimension a mm : 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 4.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.5

##### CONTROL LEVER

control lever  
position degree : 100.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 7.50  
Rated speed rpm : 1460  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1490  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1600

rack travel mm : 4.00  
Rated speed rpm : 1540

##### LOW IDLE

##### Testing:

Rated speed rpm : 350  
rack travel mm : 7.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 760  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 8.55  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 9.85  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 8.95  
Tolerance mm :  $\pm$  0.15

Start interlock

End of test specification sheet

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 876 192  
Injection pump  
Pump designation : PES6A90D410RS2293  
EP type number : 0 410 896 031  
Governor  
Governor design. : RSV575...1250A1C618L  
Governor no. : 0 420 232 407

Cust. part No. :

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM 352  
Power KW : 88.3

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 61.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

## Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 575  
 Rack travel in mm : 6.50  
 Tolerance mm :  $\pm$  0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. :  $\pm$  5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 4.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm :  $\pm$  0.35

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1230  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 61.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  0.5  
 Check tolerance  
 cm<sup>3</sup>/1000s. :  $\pm$  2.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 4.5

#### CONTROL LEVER

control lever  
 position degree : 62.0  
 tolerance degree :  $\pm$  4.0

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1251  
 Tolerance 1/min :  $\pm$  1  
 rack travel mm : 9.50

Rated speed rpm : 1280  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm :  $\pm$  0.70  
 Rated speed rpm : 1350

Rated speed rpm : 1253  
 Tolerance 1/min :  $\pm$  1  
 rack travel mm : 9.50

Rated speed rpm : 1282  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm :  $\pm$  0.70  
 Rated speed rpm : 1350

Rated speed rpm : 1255  
 Tolerance 1/min :  $\pm$  1  
 rack travel mm : 9.50

Rated speed rpm : 1284  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm :  $\pm$  0.70  
 Rated speed rpm : 1350

Rated speed rpm : 1257  
 Tolerance 1/min :  $\pm$  1  
 rack travel mm : 9.50

Rated speed rpm : 1286  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm :  $\pm$  0.70  
 Rated speed rpm : 1350

Rated speed rpm : 1259  
 Tolerance 1/min :  $\pm$  1  
 rack travel mm : 9.50

Rated speed rpm : 1288

Tolerance 1/min : + 5  
rack travel mm : 4.00  
  
rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1350

Rated speed rpm : 1260  
rack travel mm : 9.50

Rated speed rpm : 1290  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 28.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 575  
rack travel mm : 6.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 620  
Tolerance 1/min : + 15

Rated speed rpm : 100

CRT mm min. : > 19.00

Rated speed rpm : 650

CRT mm max. : < 1.00

#### SET IDLE AUXILIARY SPRING

Rated speed rpm : 650

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm3/1000 strokes : 83.0  
Tolerance  
cm3/1000 strokes : + 5.0  
Check tolerance  
cm3/1000S. : + 8.0

---

#### LOW IDLE

Rated speed rpm : 575  
Del. quantity  
cm3/1000 strokes : 13.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 5.0  
Spreed  
Tolerance  
cm3/1000 strokes : 2.0  
Check tolerance  
cm3/1000S. : 4.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.09.96  
Test oil : ISO 4113  
Combination No. : 0 400 876 218  
Injection pump  
Pump designation : PES6A90D410RS2293  
EP type number : 0 410 896 031  
Governor  
Governor design. : RSV350...1400A0C1080  
: L  
Governor no. : 0 420 232 408  
Cust. part No. :

Customer spec. information  
Customer : MB-NFZ  
Motor : OM 352  
Power KW : 92.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder assembly : 0 681 343 009  
Opening pressure bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1400  
Rack travel in mm : 9.75  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 63.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance cm<sup>3</sup>/1000S. : ± 2.5  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

##### CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1570

rack travel mm : 4.00  
Rated speed rpm : 1525

rack travel mm : 8.70  
Rated speed rpm : 1450  
Tolerance 1/min : + 5

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 6.80  
Tolerance mm : + 0.10

##### Testing:

rack travel mm : 2.00  
Rated speed rpm : 2775  
Tolerance 1/min : + 2325

Rated speed rpm : 100

CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 9.75  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 10.00  
Tolerance mm : + 0.10

##### Start interlock

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.20  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113

Combination No. : 0 400 876 255

Injection pump  
Pump designation : PES6A900410RS2293  
EP type number : 0 410 896 031

Governor  
Governor design. : RSV350...1300A0C783L  
Governor no. : 0 420 232 409

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 352 A  
Power KW : 110.3

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 5.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

##### CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1600

rack travel mm : 4.00  
Rated speed rpm : 1445

rack travel mm : 10.40  
Rated speed rpm : 1350  
Tolerance 1/min : + 5

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 7.40  
Tolerance mm : + 0.10

##### Testing:

rack travel mm : 2.00  
Rated speed rpm : 490  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.45  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 11.50  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
rack travel mm : 11.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.55  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.65  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 275  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 390  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

Aneroid pressure  
hPa : 700  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 68.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113

Combination No. : 0 400 876 257

Injection pump  
Pump designation : PES6A90D410RS2293Z  
EP type number : 0 410 896 037

Governor  
Governor design. : RSV350...1300A0C1101  
: -2L  
Governor no. : 0 420 232 411

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 352  
Power KW : 69.9

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 8.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 45.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800  
  
Rack travel in mm : 0.50  
Tolerance mm : + 0.20  
  
governor spring  
pre-tension  
click setting x : 4.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 45.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

##### CONTROL LEVER

control lever  
position degree : 113.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1500  
  
rack travel mm : 4.00  
Rated speed rpm : 1405  
  
rack travel mm : 7.20  
Rated speed rpm : 1350  
Tolerance 1/min : + 5

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 6.70  
Tolerance mm : + 0.10

##### Testing:

rack travel mm : 2.00  
Rated speed rpm : 480  
Tolerance 1/min : + 30  
  
Rated speed rpm : 100  
  
CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 8.25  
Tolerance mm : + 0.05  
  
Rated speed rpm : 500  
rack travel mm : 9.15  
Tolerance mm : + 0.05  
  
Rated speed rpm : 900  
rack travel mm : 9.00  
Tolerance mm : + 0.10  
  
Rated speed rpm : 1075  
rack travel mm : 8.45  
Tolerance mm : + 0.15

##### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 876 260  
Injection pump  
Pump designation : PES6A90D410RS2293  
EP type number : 0 410 896 031  
Governor  
Governor design. : RSV350...1300A0C1105  
: L  
Governor no. : 0 420 232 413  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 352 A  
Power KW : 91.9

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 0198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 67.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : 4.5

Rated speed rpm : 350

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000s. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Dimension a mm : 0.40

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring  
pre-tension

click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 67.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : ± 2.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : 4.5

##### CONTROL LEVER

control lever

position degree : 115.0

tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1540

rack travel mm : 4.00

Rated speed rpm : 1425

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 6.90

Tolerance mm : ± 0.10

##### Testing:

rack travel mm : 2.00

Rated speed rpm : 490

Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1300

rack travel mm : 10.05

Tolerance mm : ± 0.05

Rated speed rpm : 500

rack travel mm : 10.40

Tolerance mm : ± 0.10

Rated speed rpm : 750

rack travel mm : 10.35

Tolerance mm : ± 0.05

Rated speed rpm : 1140

rack travel mm : 10.05

Tolerance mm : ± 0.05

Start interlock

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 61.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 8.0

---

## LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.10.96  
Test oil : ISO 4113

Combination No. : 0 400 876 261

Injection pump  
Pump designation : PES6A90D410RS2293  
EP type number : 0 410 896 031

Governor  
Governor design. : RSV350...750A0C741L  
Governor no. : 0 420 232 414

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 352 A  
Power KW : 62.5

## TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 64.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 8.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800

Aneroid pressure  
hPa :

Del. quantity  
cm<sup>3</sup>/1000 strokes : 64.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

##### CONTROL LEVER

control lever  
position degree : 81.0  
tolerance degree : ± 4.0

##### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 9.90

Rated speed rpm : 792  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 820

Rated speed rpm : 751  
rack travel mm : 9.90

Rated speed rpm : 793  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 820

Rated speed rpm : 752  
rack travel mm : 9.90

Rated speed rpm : 794  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 820

Rated speed rpm : 753  
rack travel mm : 9.90

Rated speed rpm : 795  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 820

Rated speed rpm : 754  
rack travel mm : 9.90

Rated speed rpm : 796

Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00  
  
rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 820

Rated speed rpm : 755  
rack travel mm : 9.90

Rated speed rpm : 797  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 820

---

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  30

#### SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.05

#### Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113  
Combination No. : 0 400 876 264  
Injection pump  
Pump designation : PES6A90D410RS2293Z  
EP type number : 0 410 896 037  
Governor  
Governor design. : RSV350...1400A0C745L  
Governor no. : 0 420 232 416

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 352 A  
Power KW : 123.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

## Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 350

Rack travel in mm : 7.40  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 12.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 5.0

Spread  
Tolerance  
cm3/1000 strokes : 2.0  
Check tolerance  
cm3/1000S. : 4.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380  
Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 76.0  
Tolerance  
cm3/1000 strokes : + 0.5  
Check tolerance  
cm3/1000S. : + 2.5

Spread  
Tolerance  
cm3/1000 strokes : 3.0  
Check tolerance  
cm3/1000S. : 4.5

##### CONTROL LEVER

control lever  
position degree : 66.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 10.90  
Rated speed rpm : 1425  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1525  
Tolerance 1/min : + 15

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1700

rack travel mm : 4.00  
Rated speed rpm : 1545

##### LOW IDLE

control lever  
position degree : 33.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 7.90  
Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 350  
rack travel mm : 7.40  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 600  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### Start interlock

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 83.0  
Tolerance  
cm3/1000 strokes : + 5.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : 9 400 030 749

Injection pump  
Pump designation : PES4A95D320/3RS2880  
EP type number : 9 410 037 214

Governor  
Governor design. : RSV475...1050A0C864R  
Governor no. : F 002 A20 200

Cust. part No. : DEP: 3930155

Customer-spec. information  
Motor : CUMMINS-4BTA-3.9  
Power KW : 68.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 6.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.50  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 102.5

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 3.0
Speed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 6.5

Rated speed rpm	: 475
Rack travel in mm	: 6.15
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 18.5
Tolerance	
cm3/1000 strokes	: + 2.0
Check tolerance	
cm3/1000S.	: + 4.5
Speed	
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000S.	: 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring	
pre-tension	
click setting x	: 4.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 715

Del. quantity	
cm3/1000 strokes	: 102.5
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 3.0
Speed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 6.5

#### CONTROL LEVER

control lever	
position degree	: 102.0
tolerance degree	: + 4.0

#### RATED SPEED

rack travel mm	: 11.50
Rated speed rpm	: 1110
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1225
Tolerance 1/min	: + 5

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1350

rack travel mm	: 4.00
Rated speed rpm	: 1225

#### LOW IDLE

control lever	
position degree	: 84.0
tolerance degree	: + 4.0

#### Control lever difference

Grad	: 18.0
tolerance degree	: + 6.0

#### Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 5.65
Tolerance mm	: + 0.10

#### Testing:

Rated speed rpm	: 475
rack travel mm	: 6.15

Tolerance mm : + 0.10  
Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.50  
Tolerance mm : + 0.05  
  
Rated speed rpm : 600  
rack travel mm : 13.90  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 715  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 540  
rack travel mm : 13.10  
Tolerance mm : + 0.20  
  
Pressure hPa : 400  
rack travel mm : 12.40  
Tolerance mm : + 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 715  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 72.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : 9 400 030 751

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1050A0C866R  
Governor no. : F 002 A20 202

Cust. part No. : 393 D158

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BT  
Power KW : 94.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.00  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 86.1
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: ± 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: 6.5
<hr/>	

Rated speed rpm	: 475
<hr/>	
Rack travel in mm	: 6.60
Tolerance mm	: ± 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 18.6
Tolerance cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.5
<hr/>	
Spreed	
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance cm <sup>3</sup> /1000S.	: 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
<hr/>	
governor spring pre-tension	
click setting x	: 4.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
-----------------	--------

Aneroid pressure hPa	: 800
Del. quantity cm <sup>3</sup> /1000 strokes	: 86.1
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 6.5

#### CONTROL LEVER

control lever position degree	: 102.0
tolerance degree	: ± 4.0

#### RATED SPEED

rack travel mm	: 11.00
Rated speed rpm	: 1095
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1190
Tolerance 1/min	: ± 15

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1280

rack travel mm	: 4.00
Rated speed rpm	: 1200

#### LOW IDLE

control lever position degree	: 84.0
tolerance degree	: ± 4.0

Control lever difference Grad	: 18.0
tolerance degree	: ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 6.10
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 475  
rack travel mm : 6.60  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 610  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100  
CRT mm min. :  $>$  19.50

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 650  
Pressure hPa : 800

Pressure hPa : -  
Rated speed rpm : 650  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 650

Pressure hPa : 550  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 475  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 84.7  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.6  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 009

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1050A0C886R  
Governor no. : F 002 A20 211

Cust. part No. : 393 0159

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BT  
Power KW : 100.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 98.2

Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 3.0
Speed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 6.0
Rated speed rpm	: 475
Rack travel in mm	: 5.05
Tolerance mm	: + 0.10
Del. quantity cm3/1000 strokes	: 18.5
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000S.	: + 4.5
Speed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever position degree	: FREE
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring pre-tension click setting x	: 2.75

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure hPa	: 900
Del. quantity cm3/1000 strokes	: 98.2

Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 3.0
Speed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 6.0

---

CONTROL LEVER

control lever position degree	: 100.0
tolerance degree	: + 4.0
RATED SPEED	
rack travel mm	: 10.25
Rated speed rpm	: 1115
Tolerance 1/min	: + 5
rack travel mm	: 4.50
Rated speed rpm	: 1170
Tolerance 1/min	: + 5
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1275
rack travel mm	: 4.50
Rated speed rpm	: 1170

---

LOW IDLE

control lever position degree	: 82.0
tolerance degree	: + 4.0
Control lever difference Grad	: 18.0
tolerance degree	: + 6.0
Setting point w/out bumper spring	
Rated speed rpm	: 475
rack travel mm	: 4.55
Tolerance mm	: + 0.10
Testing:	
Rated speed rpm	: 475
rack travel mm	: 5.05
Tolerance mm	: + 0.10

rack travel mm	:	2.00
Rated speed rpm	:	550
Tolerance 1/min	:	+ 30
Rated speed rpm	:	100
CRT mm min.	:	> 19.00

---

#### TORQUE CONTROL

Rated speed rpm	:	1050
rack travel mm	:	11.25
Tolerance mm	:	+ 0.05

Rated speed rpm	:	800
rack travel mm	:	11.80
Tolerance mm	:	+ 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:	650
Pressure hPa	:	900

Pressure hPa	:	-
Rated speed rpm	:	650
rack travel mm	:	9.30
Tolerance mm	:	+ 0.20

#### MEASUREMENT

Rated speed rpm	:	650
Pressure hPa	:	485
rack travel mm	:	11.00
Tolerance mm	:	+ 0.20

Pressure hPa	:	310
rack travel mm	:	10.10
Tolerance mm	:	+ 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	900
Rated speed rpm	:	800
Del. quantity		
cm3/1000 strokes	:	106.2
Tolerance		
cm3/1000 strokes	:	+ 2.0

Check tolerance		
cm3/1000s.	:	+ 4.0

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	650
Del. quantity		
cm3/1000 strokes	:	73.8
Tolerance		
cm3/1000 strokes	:	+ 1.0
Check tolerance		
cm3/1000s.	:	+ 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.50
Tolerance mm	:	+ 0.50
Del. quantity		
cm3/1000 strokes	:	121.5
Tolerance		
cm3/1000 strokes	:	+ 10.0
Check tolerance		
cm3/1000s.	:	+ 15.0

---

#### LOW IDLE

Rated speed rpm	:	475
Del. quantity		
cm3/1000 strokes	:	18.5
Tolerance		
cm3/1000 strokes	:	+ 2.0
Check tolerance		
cm3/1000s.	:	+ 4.5
Speed		
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000s.	:	8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 010

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1050A0C887R  
Governor no. : F 002 A20 209

Cust. part No. : 3930160

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BT  
Power KW : 107.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.8

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.65

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.8

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.8

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 105.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1260

rack travel mm : 4.00  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 19.0  
tolerance degree : ± 6.0

##### Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 5.15  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 475  
rack travel mm : 5.65  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 580  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100  
CRT mm min. :  $>$  19.50

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 800

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 700  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.20  
  
Pressure hPa : 560  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.9  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.9  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.8  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113  
Combination No. : F 002 A0Z 011  
Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215  
Governor  
Governor design. : RSV475...1100A0C888R  
Governor no. : F 002 A20 212

Cust. part No. : 3930164

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTA  
Power KW : 124.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.95  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 20.6

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Spreed

Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm3/1000 strokes : 116.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 95.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 12.70  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1165  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1250

rack travel mm : 4.00  
Rated speed rpm : 1170

##### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree : + 4.0

Control lever difference  
Grad : 18.0  
tolerance degree : + 6.0

##### Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 5.45  
Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 475  
rack travel mm : 5.95  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 540  
Tolerance 1/min : + 30  
  
Rated speed rpm : 100  
  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.65  
Tolerance mm : + 0.05  
  
Rated speed rpm : 750

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.60  
Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 550  
rack travel mm : 12.10  
Tolerance mm : + 0.20  
  
Pressure hPa : 400  
rack travel mm : 11.10  
Tolerance mm : + 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.6  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 012

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1000AOC889R  
Governor no. : F 002 A20 210

Cust. part No. : 3930162

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTA-160/2000  
Power kW : 119.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.9

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Speed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.90  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 23.5

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Speed

Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 2.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 850  
Del. quantity  
cm3/1000 strokes : 116.9

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Speed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 94.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 12.30  
Rated speed rpm : 1050  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1200

rack travel mm : 4.00  
Rated speed rpm : 1135

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Control lever difference  
Grad : 20.0  
tolerance degree : + 6.0

#### Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 5.10  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 475  
rack travel mm : 5.90  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 540  
Tolerance 1/min :  $\pm$  30  
  
Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 850  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 550  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.20  
  
Pressure hPa : 350  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.6  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 014

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1000A0C891R  
Governor no. : F 002 A20 214

Cust. part No. : 3930161

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTA-147 HP  
Power KW : 106.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.3

Tolerance		
cm3/1000 strokes	: +	1.0
<hr/>		
Check tolerance		
cm3/1000S.	: +	3.0
<hr/>		
Spreed		
<hr/>		
Tolerance		
cm3/1000 strokes	:	4.0
<hr/>		
Check tolerance		
cm3/1000S.	:	6.5
<hr/>		

Rated speed rpm	:	475
Rack travel in mm	:	5.20
Tolerance mm	: +	0.10
Del. quantity		
cm3/1000 strokes	:	17.6
Tolerance		
cm3/1000 strokes	: +	2.0
Check tolerance		
cm3/1000S.	: +	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000S.	:	8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever		
position degree	:	FREE
Rated speed rpm	:	800
Rack travel in mm	:	0.50
Tolerance mm	: +	0.20
governor spring		
pre-tension		
click setting x	:	1.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1000
Aneroid pressure		
hPa	:	1200
Del. quantity		
cm3/1000 strokes	:	112.3

Tolerance		
cm3/1000 strokes	: +	1.0
Check tolerance		
cm3/1000S.	: +	3.0
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000S.	:	6.5

---

CONTROL LEVER

control lever		
position degree	:	92.0
tolerance degree	: +	4.0

RATED SPEED

rack travel mm	:	11.60
Rated speed rpm	:	1065
Tolerance 1/min	: +	5

rack travel mm	:	4.00
Rated speed rpm	:	1130
Tolerance 1/min	: +	5

rack travel mm	:	0.85
Tolerance mm	: +	0.55
Rated speed rpm	:	1250

rack travel mm	:	4.00
Rated speed rpm	:	1130

---

LOW IDLE

control lever		
position degree	:	75.0
tolerance degree	: +	4.0

Control lever difference		
Grad	:	17.0
tolerance degree	: +	6.0

Setting point w/out bumper spring

Rated speed rpm	:	475
rack travel mm	:	4.70
Tolerance mm	: +	0.10

Testing:

Rated speed rpm	:	475
rack travel mm	:	5.20
Tolerance mm	: +	0.10

rack travel mm : 2.00  
Rated speed rpm : 540  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.60  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm : + 0.10

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600  
rack travel mm : 12.10  
Tolerance mm : + 0.20

Pressure hPa : 475  
rack travel mm : 11.40  
Tolerance mm : + 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.9  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.6  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 047

Injection pump  
Pump designation : PES6A100D320/3RS3513  
EP type number : F 002 A10 002

Governor  
Governor design. : RSV450...750A4C926R  
Governor no. : F 002 A20 234

Cust. part No. : 3931254

Customer-spec. information  
Customer : CDC  
Motor : 6CT 8.3  
Power KW : 133.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 7.75  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 13.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 5.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 94.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 12.10  
Rated speed rpm : 810  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 840  
Tolerance 1/min : ± 5

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 925

rack travel mm : 4.00  
Rated speed rpm : 840

#### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 19.0  
tolerance degree : ± 6.0

#### Setting point w/out bumper spring

Rated speed rpm : 450  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 450  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 500  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 13.15  
Tolerance mm :  $\pm$  0.05

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 053

Injection pump  
Pump designation : PES6A95D320/3RS2916  
EP type number : F 002 A10 010

Governor  
Governor design. : RSV475...1050A0C933R  
Governor no. : F 002 A20 239

Cust. part No. : 3283920

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BT  
Power KW : 107.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.8

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.65

Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.8

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 4.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.8

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 105.0  
tolerance degree : +- 4.0

#### RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 1095  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min : +- 5

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1260

rack travel mm : 4.00  
Rated speed rpm : 1200

#### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree : +- 4.0

#### Control lever difference

Grad : 19.0  
tolerance degree : +- 6.0

#### Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 5.15  
Tolerance mm : +- 0.10

#### Testing:

Rated speed rpm : 475  
rack travel mm : 5.65  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 580  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.20  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.70  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 800

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : + 0.10

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 12.25  
Tolerance mm : + 0.20

Pressure hPa : 560  
rack travel mm : 11.90  
Tolerance mm : + 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.9  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.9  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spræd  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97

Test oil : ISO 4113

Combination No. : 0 401 849 759

## Injection pump

Pump designation : PE10P120A520/4LS3866

EP type number : 0 411 829 712

## Governor

Governer design. : RQ300/1150PA1322

Governer no. : 0 421 801 814

Cust. part No. :

## Customer-spec. information

Customer : DHI

Motor : D2840L

Power KW : 382.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

## Overflow quantity

min. l/h : 100

Tolerance l/h : ± 10.0

## Test nozzle holde

assembly : 1 688 901 105

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.30

Tolerance mm : ± 0.05

## Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8

: - 6- 3- 5- 2

Phasing : 0-45-72-117-144

: -216-261-288-333

Tolerance : ± 0.30

## Check

tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10

## Check

tolerance °NW : ± 0.75

Barrel no. : 10

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.00

Tolerance mm : ± 0.05

Del. quantity	
cm <sup>3</sup> /1000 strokes :	192.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 4.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	7.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	10.0
<hr/>	

Rated speed rpm :	300
<hr/>	
Rack travel in mm :	6.90
Tolerance mm :	+ 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes :	20.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 3.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 6.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1222
guide sleeve	
travel mm :	6.37
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	300
guide sleeve	
travel mm :	2.11
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	1150
guide sleeve	
travel mm :	6.00
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	413

guide sleeve	
travel mm :	5.00
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	490
guide sleeve	
travel mm :	6.00
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	1450
guide sleeve	
travel mm :	11.50
Tolerance mm :	+ 0.50

GUIDE SLEEVE POSITION

control lever	
position degree :	109
Rated speed rpm :	1297
<hr/>	
Rack travel in mm :	10.98
Tolerance mm :	+ 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1150
Aneroid pressure	
hPa :	-
Del. quantity	
cm <sup>3</sup> /1000 strokes :	192.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	7.0
Check tolerance	
cm <sup>3</sup> /1000S. :	10.0

CONTROL LEVER

control lever	
position degree :	31.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	93.0
tolerance degree :	+ 4.0

RATED SPEED	
rack travel mm :	11.00
Rated speed rpm :	1217
Tolerance 1/min :	+ 5

rack travel mm : 4.00  
Rated speed rpm : 1330  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1450

---

#### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + 4.0

control lever  
position degree : 14.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.90  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 411  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT min min. : > 9.36

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.00  
Tolerance mm : + 0.05

Rated speed rpm : 650  
rack travel mm : 12.00  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.00  
Tolerance mm : + 0.05

Pressure hPa : -

E09

Rated speed rpm : 500  
rack travel mm : 10.25  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520  
rack travel mm : 11.55  
Tolerance mm : + 0.20

Pressure hPa : 400  
rack travel mm : 10.75  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 270

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 14.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113

Combination No. : 0 401 876 345

Injection pump  
Pump designation : PE6P120B320RS3301  
EP type number : 0 411 826 819

Governor  
Governor design. : RSV250...1100POA656  
Governor no. : 0 421 833 574

Cust. part No. : 3826519 P02 v. 12/96

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 102 D  
Power KW : 315.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration  
damper  
(RoBo diaphragm) : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 8.10  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.20  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	:	280.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	7.0
Check tolerance cm <sup>3</sup> /1000S.	:	11.0

Rated speed rpm	:	250
Rack travel in mm	:	6.20
Tolerance mm	:	+ 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	:	24.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 2.5
Check tolerance cm <sup>3</sup> /1000S.	:	+ 5.0
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	3.0
Check tolerance cm <sup>3</sup> /1000S.	:	6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
Rack travel in mm	:	0.50
Tolerance mm	:	+ 0.20
governor spring pre-tension click setting x	:	2.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1100
-----------------	---	------

Aneroid pressure hPa	:	1500
Del. quantity cm <sup>3</sup> /1000 strokes	:	280.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
Spreed		
Tolerance cm <sup>3</sup> /1000 strokes	:	7.0
Check tolerance cm <sup>3</sup> /1000S.	:	11.0

#### CONTROL LEVER

control lever position degree	:	44.0
tolerance degree	:	+ 4.0
control lever position degree	:	94.0
tolerance degree	:	+ 4.0

#### RATED SPEED

rack travel mm	:	12.20
Rated speed rpm	:	1145
Tolerance 1/min	:	+ 5
rack travel mm	:	4.00
Rated speed rpm	:	1230
Tolerance 1/min	:	+ 15
rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1350
rack travel mm	:	4.00
Rated speed rpm	:	1240

#### LOW IDLE

control lever position degree	:	69.0
tolerance degree	:	+ 4.0
control lever position degree	:	19.0
tolerance degree	:	+ 4.0

#### Setting point w/out bumper spring

Rated speed rpm	:	250
rack travel mm	:	5.70

Tolerance mm :  $\pm$  0.10

#### Testing:

Rated speed rpm : 250  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 370  
Tolerance 1/min :  $\pm$  30

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.10  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 1120  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.15  
  
Pressure hPa : 160  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500

E13

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 303.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97

Test oil : ISO 4113

Combination No. : 0 402 046 868

## Injection pump

Pump designation : PES6P110A320RS3349

EP type number : 0 412 016 753

## Governor

Governor design. : RQV350...1400PA1267K

Governor no. : 0 421 815 503

Cust. part No. : 16700-D8810

## Customer-spec. information

Customer : NMI

Motor : M 3.6 TI L

Power KW : 117.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

## Overflow quantity

min. l/h : 100

Tolerance l/h : ± 20.0

## Test nozzle holde

assembly : 1 688 901 101

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

## Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

Tolerance : ± 0.30

## Check

tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.50

Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 9.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1421  
guide sleeve

travel mm : 10.03  
Tolerance mm : ± 0.15

Rated speed rpm : 350

guide sleeve  
travel mm : 1.46  
Tolerance mm : ± 0.20

Rated speed rpm : 996  
guide sleeve  
travel mm : 6.78  
Tolerance mm : ± 0.25

Rated speed rpm : 610  
guide sleeve  
travel mm : 3.96

Tolerance mm : ± 0.25

Rated speed rpm : 1730  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1545

Rack travel in mm : 11.50  
Tolerance mm : ± 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 64.0  
tolerance degree : ± 4.0

control lever  
position degree : 122.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.50  
Rated speed rpm : 1410  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1540  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1640

---

#### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

control lever  
position degree : 27.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 9.50  
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 10.50

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.50  
Tolerance mm : ± 0.05

Rated speed rpm : 780  
rack travel mm : 11.95  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 11.70  
Tolerance mm : ± 0.20

#### Start interlock

Rated speed rpm : < 200  
Rated speed rpm : > 250

Check  
speed 1/min : < 180  
Check  
speed 1/min : > 270

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 780

Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113

Combination No. : 0 402 618 812

Injection pump  
Pump designation : PE8P120A300LS7908  
EP type number : 0 412 628 922

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 04223920KY

Customer-spec. information  
Customer : KHD  
Motor : BF8M1015/C

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 220  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 5  
                  : - 3- 1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 315.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.30  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### TORQUE CONTROL

Rated speed rpm : 950

rack travel mm : 13.30

Tolerance mm :  $\pm$  0.05

Start interlock

#### LOW IDLE

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113

Combination No. : 0 402 646 652

Injection pump  
Pump designation : PE6P130A72ORS7137  
EP type number : 0 412 636 832

Governor  
Governor design. : RQ750PA865-3  
Governor no. : 0 421 801 751

Cust. part No. : 866371 P07 v.12.96

Customer-spec. information  
Customer : PENTA  
Motor : TWD 1630 G  
Power KW : 392.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper  
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 019

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.25  
Tolerance mm : ± 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 450.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

#### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 450.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### CONTROL LEVER

control lever  
position degree : 29.0  
tolerance degree : +- 4.0

control lever  
position degree : 90.0  
tolerance degree : +- 4.0

RATED SPEED  
rack travel mm : 13.25  
Rated speed rpm : 751  
Tolerance 1/min : +- 3

rack travel mm : 4.00  
Rated speed rpm : 789  
Tolerance 1/min : +- 7

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

##### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748  
rack travel mm : 13.25

Rated speed rpm : 787  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 749  
rack travel mm : 13.25

Rated speed rpm : 788  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 750  
rack travel mm : 13.25

Rated speed rpm : 789  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 751  
rack travel mm : 13.25

Rated speed rpm : 790  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 752  
rack travel mm : 13.25

Rated speed rpm : 791  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 850

Rated speed rpm : 753  
rack travel mm : 13.25

Rated speed rpm : 792  
Tolerance 1/min :  $\pm$  5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 850

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.05

Start interlock

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.02.97  
Test oil : ISO 4113  
Combination No. : 0 402 646 667  
Injection pump  
Pump designation : PE6P120A32ORS7412  
EP type number : 0 412 626 953  
Governor  
Governor design. : RGV275...1000PA1278K  
Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

## Customer-spec. information

Customer : DAF  
Motor : XF 315 M  
Power KW : 315.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 318.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1077  
guide sleeve

travel mm : 10.24  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 275  
guide sleeve

travel mm : 2.04  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 704  
guide sleeve

travel mm : 6.53  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 400  
guide sleeve

travel mm : 3.92

Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1310

guide sleeve

travel mm : 13.50

Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1158

Rack travel in mm : 12.00

Tolerance mm :  $\pm$  2.70

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 318.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever

position degree : 119.0

tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 12.40

Rated speed rpm : 1040

Tolerance 1/min :  $\pm$  5

Check

speed 1/min :  $\pm$  10

rack travel mm : 4.00

Rated speed rpm : 1145

Tolerance 1/min :  $\pm$  15

Check

speed 1/min :  $\pm$  20

rack travel mm : 0.50

Tolerance mm :  $\pm$  0.50

Rated speed rpm : 1275

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 3.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 175

CRT mm min. :  $>$  6.60

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 980  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 980  
Pressure hPa : 1500  
rack travel mm : 13.40

Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 980  
rack travel mm : 8.55  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 520  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 210  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.15

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500

Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 342.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -

Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 0 400 864 099

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...1250A5C858L  
Governor no. : 0 420 232 621

Cust. part No. : 0423 1595 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F4L912/913\_NEU  
Power KW : 54.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 11.5

Tolerance

cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity

cm<sup>3</sup>/1000 strokes : 76.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 10.35

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1339

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1510

rack travel mm : 4.00

Rated speed rpm : 1360

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 8.00

Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 325

rack travel mm : 8.50

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 473

Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 030 738

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1100A0C851R  
Governor no. : 9 420 034 717

Cust. part No. : 3929408

## Customer-spec. information

Customer : CDC  
Motor : 6BT  
Power KW : 98.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.05  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	:	95.2
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	+ 3.0
<hr/>		
Spreed		
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	4.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	6.5
<hr/>		

Rated speed rpm	:	475
<hr/>		
Rack travel in mm	:	5.10
Tolerance mm	:	+ 0.10
<hr/>		
Del. quantity cm <sup>3</sup> /1000 strokes	:	18.5
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.5
<hr/>		
Spreed		
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	:	FREE
Rated speed rpm	:	800
<hr/>		
Rack travel in mm	:	0.50
Tolerance mm	:	+ 0.20
<hr/>		
governor spring pre-tension		
click setting x	:	5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1100
-----------------	---	------

Aneroid pressure hPa	:	900
<hr/>		
Del. quantity cm <sup>3</sup> /1000 strokes	:	95.2
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 3.0
<hr/>		
Spreed		
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	4.0
Check tolerance cm <sup>3</sup> /1000S.	:	6.5

#### CONTROL LEVER

control lever position degree	:	104.0
tolerance degree	:	+ 4.0

#### RATED SPEED

rack travel mm	:	10.00
Rated speed rpm	:	1165
Tolerance 1/min	:	+ 5

rack travel mm	:	4.50
Rated speed rpm	:	1240
Tolerance 1/min	:	+ 5

rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1325

rack travel mm	:	4.50
Rated speed rpm	:	1240

#### LOW IDLE

control lever position degree	:	85.0
tolerance degree	:	+ 4.0

Control lever difference		
Grad	:	19.0
tolerance degree	:	+ 6.0

#### Setting point w/out bumper spring

Rated speed rpm	:	475
rack travel mm	:	4.60
Tolerance mm	:	+ 0.10

Testing:

Rated speed rpm : 475  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 800  
Pressure hPa : 900

Pressure hPa : -  
Rated speed rpm : 800  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 800  
Pressure hPa : 560  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 400  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 102.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 007

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...110DA0C881R  
Governor no. : F 002 A20 207

Cust. part No. : 3928597

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTA  
Power KW : 122.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

FO4

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## Start of delivery blocking

\*NW after s.o.d. : 8.50  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.4

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spread

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.20  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 21.5

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Spread

Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm3/1000 strokes : 115.4

F05

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spread

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 103.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 11.80  
Rated speed rpm : 1155  
Tolerance 1/min : + 5

rack travel mm : 6.50  
Rated speed rpm : 1225  
Tolerance 1/min : + 5

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1400

rack travel mm : 6.50  
Rated speed rpm : 1225

##### LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : + 4.0

Control lever difference  
Grad : 23.0  
tolerance degree : + 6.0

##### Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 4.70  
Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 475  
rack travel mm : 5.20  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 555  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.85  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 14.00  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.90  
Tolerance mm : + 0.20

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 600  
rack travel mm : 12.50  
Tolerance mm : + 0.20

Pressure hPa : 410  
rack travel mm : 10.90  
Tolerance mm : + 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 048

Injection pump  
Pump designation : PES6A95D320/3RS2916  
EP type number : F 002 A10 010

Governor  
Governor design. : RSV475...950A0C927R  
Governor no. : F 002 A20 235

Cust. part No. : 3283916

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTA-160/1900  
Power KW : 119.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.4

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.4

F08

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 95.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1000

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1075

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 1075

##### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 17.0  
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 475  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 475  
rack travel mm : 5.90  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 540  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 850  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 550  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.20  
  
Pressure hPa : 350  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.6  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.02.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 052

Injection pump  
Pump designation : PES6A95D320/3RS2916  
EP type number : F 002 A10 010

Governor  
Governor design. : RSV475...1000A0C932R  
Governor no. : F 002 A20 238

Cust. part No. : 328 3918

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTA-147 HP  
Power KW : 106.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

F10

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.3

Tolerance	
cm3/1000 strokes	: ± 1.0
Check tolerance	
cm3/1000S.	: ± 3.0
Speed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 6.5

Rated speed rpm	: 475
Rack travel in mm	: 5.20
Tolerance mm	: ± 0.10
Del. quantity	
cm3/1000 strokes	: 17.6
Tolerance	
cm3/1000 strokes	: ± 2.0
Check tolerance	
cm3/1000S.	: ± 4.5
Speed	
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000S.	: 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever	
position degree	: FREE
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring	
pre-tension	
click setting x	: 1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm3/1000 strokes	: 112.3

Tolerance	
cm3/1000 strokes	: ± 1.0
Check tolerance	
cm3/1000S.	: ± 3.0
Speed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 6.5

##### CONTROL LEVER

control lever	
position degree	: 92.0
tolerance degree	: ± 4.0

##### RATED SPEED

rack travel mm	: 11.60
Rated speed rpm	: 1065
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1130
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1250

rack travel mm	: 4.00
Rated speed rpm	: 1130

##### LOW IDLE

control lever	
position degree	: 75.0
tolerance degree	: ± 4.0

##### Control lever difference

Grad	: 17.0
tolerance degree	: ± 6.0

##### Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 4.70
Tolerance mm	: ± 0.10

##### Testing:

Rated speed rpm	: 475
rack travel mm	: 5.20
Tolerance mm	: ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 540  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.60  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm : + 0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 600  
rack travel mm : 12.10  
Tolerance mm : + 0.20  
  
Pressure hPa : 475  
rack travel mm : 11.40  
Tolerance mm : + 0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 83.9  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm3/1000 strokes : 121.5  
Tolerance  
cm3/1000 strokes : + 10.0  
Check tolerance  
cm3/1000S. : + 15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm3/1000 strokes : 17.6  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 4.5  
Speed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.02.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 619  
  
Injection pump  
Pump designation : PES6P120A720RS7423  
EP type number : 0 412 726 963

Governor  
Governor design. : RQV325...900PA909  
: K  
Governor no. : 0 421 815 533

Cust. part No. : 313GC5224-P4

## Customer-spec. information

Customer : MACK  
Motor : EN7400  
Power KW : 298.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Rack travel in mm : 5.10

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 957  
guide sleeve  
travel mm : 8.66  
Tolerance mm : + 0.15

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.79  
Tolerance mm : + 0.20

Rated speed rpm : 763  
guide sleeve  
travel mm : 7.04  
Tolerance mm : + 0.25

Rated speed rpm : 520  
guide sleeve  
travel mm : 4.05  
Tolerance mm : + 0.25

Rated speed rpm : 1350  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 115.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 15.00  
Rated speed rpm : 945  
Tolerance 1/min : + 5  
Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1140  
Tolerance 1/min : + 15  
Check  
speed 1/min : + 20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

---

LOW IDLE

control lever  
position degree : 62.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

Rated speed rpm : 225  
CRT mm min. : > 7.00  
Rated speed rpm : 425

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 16.00  
Tolerance mm : ± 0.05

Rated speed rpm : 625  
rack travel mm : 15.60  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 13.90  
Tolerance mm : ± 0.20

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 900  
Pressure hPa : 1500

Pressure hPa : -  
Rated speed rpm : 900  
rack travel mm : 8.50  
Tolerance mm : ± 0.20

##### MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 980  
rack travel mm : 14.40  
Tolerance mm : ± 0.20

Pressure hPa : 450  
rack travel mm : 10.35  
Tolerance mm : ± 0.05

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 275

Check  
speed 1/min : > 80

Check  
speed 1/min : < 285

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 305.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.20  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.02.97  
Test oil : ISO 4113  
Combination No. : 0 402 746 625  
Injection pump  
Pump designation : PES6P120A720RS7424  
EP type number : 0 412 726 964

Governor  
Governor design. : RQV325...875PA944  
: K  
Governor no. : 0 421 815 539

Cust. part No. : 313GC5223-P2

Customer-spec. information  
Customer : MACK  
Motor : EM7-250  
Power KW : 187.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 413 359 008  
  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 12.00  
Tolerance mm : ± 1.00  
  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 340

Rack travel in mm : 4.70  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 933  
guide sleeve  
travel mm : 9.87  
Tolerance mm : + 0.15

Rated speed rpm : 340  
guide sleeve  
travel mm : 2.25  
Tolerance mm : + 0.20

Rated speed rpm : 706  
guide sleeve  
travel mm : 8.09  
Tolerance mm : + 0.25

Rated speed rpm : 480  
guide sleeve  
travel mm : 4.59  
Tolerance mm : + 0.25

Rated speed rpm : 1260

guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 116.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 11.40  
Rated speed rpm : 920  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1055  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 63.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 340  
rack travel mm : 4.70  
Tolerance mm : + 0.10

Rated speed rpm : 240

CRT mm min. : > 6.34

Rated speed rpm : 425

---

#### TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 510  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 510  
  
Pressure hPa : 570  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 285  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.05

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 255

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 345.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.0

---

#### LOW IDLE

Rated speed rpm : 340  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.02.97  
Test oil : ISO 4113

Combination No. : 0 401 496 002

Injection pump  
Pump designation : PE6R130/72ORS1503  
EP type number : 0 411 436 001

Governor  
Governor design. : RE31  
Governor no. : 0 421 890 201

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8210.42.5000

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

Check  
tolerance °NW : ± 0.40

Barrel no. : 1

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 950  
Uact V : 3.218  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 279.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 16.0

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750  
Uact V : 3.218  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 297.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 4.5  
Check tolerance  
cm<sup>3</sup>/1000s. : +/- 9.0

Rated speed rpm : 550  
Uact V : 2.300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 4.5  
Check tolerance  
cm<sup>3</sup>/1000s. : +/- 9.0

TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.310
Tolerance Volt	:	± 0.060
Check tolerance		
Volt	:	± 0.080
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	24.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 3.0
Speed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	10.0

---

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.700
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	145.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 15.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	± 20.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 0 402 066 711

Injection pump  
Pump designation : PES6P120A120RS3358  
EP type number : 0 412 026 784

Governor  
Governor design. : RSV475...1150P2A661  
Governor no. : 0 421 833 581

Cust. part No. : 3283521

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTAA ELITE  
Power KW : 139.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity  
min. L/h : 100  
Tolerance L/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 6.75  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.90  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 7.20  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 3.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure

hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1145

Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00

Rated speed rpm : 1280

Tolerance 1/min :  $\pm$  15

rack travel mm : 0.85

Tolerance mm :  $\pm$  0.55

Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 84.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 6.70

Tolerance mm :  $\pm$  0.10

##### Testing:

Rated speed rpm : 475

rack travel mm : 7.20

Tolerance mm : + 0.10  
rack travel mm : 2.00  
Rated speed rpm : 660  
Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.90  
Tolerance mm : + 0.05  
  
Rated speed rpm : 750  
rack travel mm : 12.90  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.90  
Tolerance mm : + 0.05  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm : + 0.20

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 900  
rack travel mm : 11.10  
Tolerance mm : + 0.20  
  
Pressure hPa : 560  
rack travel mm : 9.60  
Tolerance mm : + 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 193.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 25.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 0 402 076 813

Injection pump  
Pump designation : PES6P120A1320/5RS338  
: 5

EP type number : 0 412 026 802

Governor  
Governor design. : RSV350...1100P8A665  
Governor no. : 0 412 026 800

Cust. part No. : 1393870

Customer-spec. information  
Customer : SCANIA  
Motor : DSI9 46M

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 233.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  7.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Rated speed rpm : 350

Rack travel in mm : 3.30  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 233.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  7.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

##### CONTROL LEVER

control lever  
position degree : 57.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 107.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 12.40  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5  
Check  
speed 1/min :  $\pm$  10

rack travel mm : 4.00  
Rated speed rpm : 1215  
Tolerance 1/min :  $\pm$  15  
Check  
speed 1/min :  $\pm$  20

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 25.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 2.80  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 3.30  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm : + 0.05

Rated speed rpm : 1100  
rack travel mm : 13.45  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.50  
Tolerance mm : + 0.20

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : 11.40  
Tolerance mm : + 0.15

Pressure hPa : 440  
rack travel mm : 12.65  
Tolerance mm : + 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.50  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113  
Combination No. : 0 402 746 609C  
Injection pump  
Pump designation : PES6P130A720RS7411  
EP type number : 0 412 736 808

Governor  
Governor design. : RQ275/950PA1274  
Governor no. : 0 421 801 807

Cust. part No. : 221 575

Customer-spec. information  
Customer : RABA  
Motor : siehe Bemerkung

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.50  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.20  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1103  
guide sleeve  
travel mm : 6.54  
Tolerance mm : + 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.06  
Tolerance mm : + 0.20

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 355  
guide sleeve  
travel mm : 4.25  
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1290  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1143

Rack travel in mm : 12.10  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 34.0  
tolerance degree : + 4.0

control lever  
position degree : 95.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.10  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 11.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 4.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 335  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 175

CRT mm min. :  $>$  6.80

---

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.20  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 380  
rack travel mm : 9.85  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 600  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil : ISO 4113

Combination No. : 0 403 474 0211

Injection pump  
Pump designation : PES4MW100/720RS1181  
EP type number : 0 413 404 017

Governor  
Governor design. : RSV400...1000MW1A348  
Governor no. : 0 420 085 183

Cust. part No. : 9880972

Customer-spec. information  
Customer : LIEBHERR  
Motor : D914TI  
Power KW : 125.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.00  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 157.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 4.0

## Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 4.50  
Tolerance mm : ± 0.20

Del. quantity  
cm3/1000 strokes : 25.0

Tolerance  
cm3/1000 strokes : ± 2.0

Check tolerance  
cm3/1000S. : ± 4.5

## Spreed

Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 5.0

## (B) SETTING OF INJECTION PUMP WITH GOVERNOR

### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 300

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 4.75

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm3/1000 strokes : 157.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 4.0

## Spreed

Tolerance  
cm3/1000 strokes : 4.0  
Check tolerance  
cm3/1000S. : 7.5

### CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree : ± 4.0

### RATED SPEED

rack travel mm : 11.00  
Rated speed rpm : 930

Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 985

Tolerance 1/min : ± 10

rack travel mm : 1.00  
Tolerance mm : ± 0.70

Rated speed rpm : 1175

rack travel mm : 4.00  
Rated speed rpm : 1000

### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : ± 4.0

### Setting point w/out bumper spring

Rated speed rpm : 550  
rack travel mm : 4.10  
Tolerance mm : ± 0.10

### Testing:

Rated speed rpm : 550  
rack travel mm : 4.50  
Tolerance mm : ± 0.20

Rated speed rpm : 100

CRT mm min. : > 19.50

### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.00

Tolerance mm :  $\pm$  0.05  
Rated speed rpm : 500  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 550  
Pressure hPa : -  
rack travel mm : 10.65  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1200  
Rated speed rpm : 550  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 530  
rack travel mm : 10.85  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 670  
rack travel mm : 11.55  
Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil : ISO 4113  
Combination No. : 0 403 476 112C  
Injection pump  
Pump designation : PES6MW100/720RS1225  
: 1  
EP type number : 0 413 406 220  
Governor  
Governor design. : RSV400...1000MW1A338  
: -1  
Governor no. : 0 420 085 184  
Cust. part No. : 9880790

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 926 T-EA2  
Power KW : 132.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 049  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.51  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 12.45  
Tolerance mm : + 0.05  
Del. quantity  
cm3/1000 strokes : 132.5  
Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.80  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 17.0

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Spreed  
Tolerance

cm3/1000 strokes : 3.5  
Check tolerance

cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 1.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 950  
Del. quantity  
cm3/1000 strokes : 132.5  
Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 7.5

#### CONTROL LEVER

control lever  
position degree : 86.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 11.45  
Rated speed rpm : 930  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 965  
Tolerance 1/min : + 10

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1100

rack travel mm : 4.00  
Rated speed rpm : 970

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 400  
rack travel mm : 5.80  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 950  
Rated speed rpm : 500  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 860  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 900  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 950  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 950  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113  
  
Combination No. : 0 403 476 112D  
  
Injection pump  
Pump designation : PES6MW100/72CRS1225  
: 1  
EP type number : 0 413 406 220  
  
Governor  
Governor design. : RSV400...1000MW1A338  
: -1  
Governor no. : 0 420 085 184  
  
Cust. part No. : 9880791

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 926 T-EA2  
Power kW : 164.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 049  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.51  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000  
  
Rack travel in mm : 14.05  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.5  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 2.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 13.05  
Rated speed rpm : 1040  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : + 10

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1200

rack travel mm : 4.00  
Rated speed rpm : 1090

#### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 400  
rack travel mm : 5.80  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1200  
Rated speed rpm : 500  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 565  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 650  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113  
  
Combination No. : 0 403 476 112E  
  
Injection pump  
Pump designation : PES6MW100/720RS1225  
: 1  
EP type number : 0 413 406 220  
  
Governor  
Governor design. : RSV400...1000MW1A338  
: -1  
Governor no. : 0 420 085 184  
  
Cust. part No. : 9880792

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 926 T-EA2  
Power KW : 170.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 049  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 3.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.51  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900  
  
Rack travel in mm : 15.15  
Tolerance mm : + 0.05  
  
Del. quantity  
cm3/1000 strokes : 167.0  
  
Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 2.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### CONTROL LEVER

control lever  
position degree : 93.0

#### RATED SPEED

rack travel mm : 14.15  
Rated speed rpm : 930

Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 985

Tolerance 1/min : + 10

rack travel mm : 1.00  
Tolerance mm : + 0.70

Rated speed rpm : 1100

rack travel mm : 4.00  
Rated speed rpm : 990

#### LOW IDLE

control lever  
position degree : 70.0

Setting point w/out bumper spring

Rated speed rpm : 500  
rack travel mm : 5.00  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 500  
rack travel mm : 5.80  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 15.15  
 Tolerance mm :  $\pm$  0.05  
  
 Rated speed rpm : 500  
 rack travel mm : 15.15  
 Tolerance mm :  $\pm$  0.05  
  
 Rated speed rpm : 700  
 rack travel mm : 15.15  
 Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : -  
 rack travel mm : 13.60  
 Tolerance mm :  $\pm$  0.10

Pressure hPa : 1200  
 Rated speed rpm : 500  
 rack travel mm : 15.15  
 Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 650  
 rack travel mm : 14.00  
 Tolerance mm :  $\pm$  0.10

Pressure hPa : 800  
 rack travel mm : 14.90  
 Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 162.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 167.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 146.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 20.25  
 Tolerance mm :  $\pm$  0.75  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 135.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.03.97  
Test oil : ISO 4113

Combination No. : 0 400 864 100

Injection pump  
Pump designation : PES4A95D410/3RS2905  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...900A1C859L  
Governor no. : 0 420 232 622

Cust. part No. : 0423 1596 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F4L912/913\_NEU  
Power KW : 54.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm3/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 7.90  
Tolerance mm : ± 0.10

Del. quantity  
cm3/1000 strokes : 11.5

Tolerance  
cm3/1000 strokes : ± 2.0

Check tolerance  
cm3/1000S. : ± 4.5

Spread  
Tolerance

cm3/1000 strokes : 5.5

Check tolerance  
cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure

hPa : -

Del. quantity  
cm3/1000 strokes : 80.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 3.0

Spread  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 90.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.80  
Rated speed rpm : 895  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 920  
Tolerance 1/min : ± 10

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1090

rack travel mm : 4.00  
Rated speed rpm : 940

---

##### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 7.40  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 325  
rack travel mm : 7.90  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.03.97  
Test oil : ISO 4113

Combination No. : 0 400 864 101

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...1250A5C860L  
Governor no. : 0 420 232 623

Cust. part No. : 0423 1788 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F4L912/913\_NEU  
Power KW : 59.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 473  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.03.97  
Test oil : ISO 4113  
Combination No. : 0 400 865 029  
Injection pump  
Pump designation : PES5A95D410/3RS2906  
EP type number : 0 410 895 971  
Governor  
Governor design. : RSV325...900A1C859L  
Governor no. : 0 420 232 622

Cust. part No. : 0423 1599 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F5L912/913\_NEU  
Power KW : 67.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.60

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.25

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 89.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.50  
Rated speed rpm : 895  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 920  
Tolerance 1/min : ± 10

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1090

rack travel mm : 4.00  
Rated speed rpm : 940

---

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.10  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 325  
rack travel mm : 8.60

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

Rated speed rpm : 500

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil :  
Combination No. : 9 400 030 708FS  
Injection pump  
Pump designation : PES6A100D320/3RS3506  
EP type number : 9 410 037 236  
Governor  
Governor design. :  
Governor no. :

Cust. part No. : TATA-CUMMINS

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BT - 125 ps

## TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 5.75  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 400

Rack travel in mm : 6.40

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1347  
guide sleeve  
travel mm : 8.48  
Tolerance mm : + 0.15

Rated speed rpm : 400  
guide sleeve  
travel mm : 1.71  
Tolerance mm : + 0.20

Rated speed rpm : 880  
guide sleeve  
travel mm : 4.97  
Tolerance mm : + 0.25

Rated speed rpm : 499  
guide sleeve  
travel mm : 2.75  
Tolerance mm : + 0.25

Rated speed rpm : 549  
guide sleeve  
travel mm : 3.30

Tolerance mm : + 0.25

Rated speed rpm : 560

guide sleeve

travel mm : 3.37

Tolerance mm : + 0.25

Rated speed rpm : 1620

guide sleeve

travel mm : 11.50

Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.00

Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity

cm<sup>3</sup>/1000 strokes : 78.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance

cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever

position degree : 61.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.30

Rated speed rpm : 1335

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1430

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1490

---

#### LOW IDLE

control lever  
position degree : 15.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 400  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 630  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100

CRT mm min. :  $>$  9.00

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 800  
Pressure hPa : 1000  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 800  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 500

rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.10

#### Start interlock

Rated speed rpm :  $>$  120  
Rated speed rpm :  $<$  300

Check  
speed 1/min :  $>$  100  
Check  
speed 1/min :  $<$  340

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.2  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  8.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.02.97  
Test oil : ISO 4113  
Combination No. : F 002 A0Z 006  
Injection pump  
Pump designation : PES4A95D320/3RS2880  
EP type number : 9 410 037 214  
Governor  
Governor design. : RSV475...1100A0C880R  
Governor no. : F 002 A20 206

Cust. part No. : 3930154

## Customer-spec. information

Customer : CDC  
Motor : 4BT3.9  
Power KW : 63.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 6.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 3.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.5

Rated speed rpm	: 475
Rack travel in mm	: 5.60
Tolerance mm	: + 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 20.5
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever	
position degree	: FREE
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring	
pre-tension	
click setting x	: 4.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure	
hPa	: -

Del. quantity	
cm <sup>3</sup> /1000 strokes	: 95.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 3.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.5

#### CONTROL LEVER

control lever	
position degree	: 106.0
tolerance degree	: + 4.0

RATED SPEED	
rack travel mm	: 10.40
Rated speed rpm	: 1155
Tolerance 1/min	: + 5

rack travel mm	: 6.00
Rated speed rpm	: 1230
Tolerance 1/min	: + 5

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1400

rack travel mm	: 6.00
Rated speed rpm	: 1230

#### LOW IDLE

control lever	
position degree	: 86.0
tolerance degree	: + 4.0

Control lever difference	
Grad	: 20.0
tolerance degree	: + 4.0

#### Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 5.10
Tolerance mm	: + 0.10

#### Testing:

Rated speed rpm	: 475
rack travel mm	: 5.60

Tolerance mm :  $\pm$  0.10  
rack travel mm : 2.00  
Rated speed rpm : 575  
Tolerance 1/min :  $\pm$  30  
Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.05

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.11.96  
Test oil : ISO 4113  
Combination No. : 0 402 034 701  
Injection pump  
Pump designation : PES4P120B120RS3379  
EP type number : 0 412 024 702  
Governor  
Governor design. : RQV475...1250PA1316K  
Governor no. : 0 421 815 544

Cust. part No. : 3928600

## Customer-spec. information

Customer : CDC  
Motor : 4BTA-A  
Power KW : 97.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 475

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1313  
guide sleeve  
travel mm : 9.12  
Tolerance mm : + 0.15

Rated speed rpm : 475  
guide sleeve  
travel mm : 1.59  
Tolerance mm : + 0.20

Rated speed rpm : 985  
guide sleeve  
travel mm : 6.26  
Tolerance mm : + 0.25

Rated speed rpm : 680  
guide sleeve  
travel mm : 3.62  
Tolerance mm : + 0.25

Rated speed rpm : 1660  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50  
Rated speed rpm : 1315  
Tolerance 1/min : + 15

rack travel mm : 6.00  
Rated speed rpm : 1390  
Tolerance 1/min : + 5

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1500

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

Control lever difference

Grad : 44.0  
tolerance degree : + 6.0

Testing:

Rated speed rpm : 475  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 400  
CRT mm min. : > 6.80  
Rated speed rpm : 550

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.55  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 11.20  
Tolerance mm : + 0.20

Rated speed rpm : 550  
rack travel mm : 10.80  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1200  
Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : 9.45  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1250  
Pressure hPa : 800  
rack travel mm : 10.50  
Tolerance mm : + 0.20

Pressure hPa : 680  
rack travel mm : 9.85  
Tolerance mm : + 0.20

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 375

Check  
speed 1/min : > 80

Check  
speed 1/min : < 385

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm3/1000 strokes : 142.0  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm3/1000 strokes : 111.5  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm : + 0.50  
Del. quantity  
cm3/1000 strokes : 176.0  
Tolerance  
cm3/1000 strokes : + 20.0  
Check tolerance  
cm3/1000S. : + 25.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm3/1000 strokes : 26.5  
Tolerance  
cm3/1000 strokes : + 3.0  
Check tolerance  
cm3/1000S. : + 5.0  
Spreed  
Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 0 402 066 702

Injection pump  
Pump designation : PES6P110A120RS3336  
EP type number : 0 412 016 751

Governor  
Governor design. : RSV550...1100P2A586  
: 1  
Governor no. : 0 421 833 480

Cust. part No. : 3926887

Customer-spec. information  
Customer : CDC  
Motor : 6CTA  
Power KW : 194.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 8.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery differende

and maximum rack  
travel : 15.00  
Difference ° CS : 1.50

## BASIC SETTING

Rated speed rpm : 1100

---

Rack travel in mm : 14.25  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 550

---

Rack travel in mm : 5.10  
Tolerance mm : + 0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

---

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

---

governor spring  
pre-tension  
click setting x : 3.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

---

Aneroid pressure  
hPa : 1500

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree : + 4.0

---

##### RATED SPEED

rack travel mm : 13.25  
Rated speed rpm : 1185  
Tolerance 1/min : + 5

---

rack travel mm : 7.80  
Rated speed rpm : 1235  
Tolerance 1/min : + 5

---

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1390

---

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

---

Control lever difference  
Grad : 22.0  
tolerance degree : + 4.0

---

Setting point w/out bumper spring

---

Rated speed rpm : 550

---

rack travel mm : 4.60

#### Testing:

Rated speed rpm : 550  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1500  
  
Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.20

##### MEASUREMENT

Rated speed rpm : 1000  
  
Pressure hPa : 995  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.20  
  
Pressure hPa : 655  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

#### LOW IDLE

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 076 755  
Injection pump  
Pump designation : PES6P110A320LS3318  
EP type number : 0 412 016 741  
Governor  
Governor design. : RSV350...750P4A561  
Governor no. : 0 421 833 406

Cust. part No. : 1820271C92

Customer-spec. information  
Customer : NAVISTAR  
Motor : DTA-466  
Power KW : 185.0

## TEST BENCH REQUIREMENTS

Inlet line : 2.4  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 076  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 015  
Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
Start of delivery blocking  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 12.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 219.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

Rated speed rpm : 350

Rack travel in mm : 5.70  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 40.0

Tolerance  
cm3/1000 strokes : + 2.0

Check tolerance  
cm3/1000S. : + 4.5

Spreed

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 2.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm3/1000 strokes : 219.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.0

Spreed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 42.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 11.50  
Rated speed rpm : 755  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 795  
Tolerance 1/min : + 5

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 900

rack travel mm : 4.00  
Rated speed rpm : 800

#### LOW IDLE

control lever  
position degree : 22.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.70  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.85  
Tolerance mm : + 0.05

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113

Combination No. : 0 402 076 783

Injection pump  
Pump designation : PES6P110A320LS3318  
EP type number : 0 412 016 749

Governor  
Governor design. : RSV350...750P4A561  
Governor no. : 0 421 833 500

Cust. part No. : 1824991C92

Customer-spec. information  
Customer : NAVISTAR  
Motor : DTA-466  
Power KW : 247.5

## TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.5

Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000S.	: +- 3.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 6.5

Rated speed rpm : 350

Rack travel in mm	: 5.00
Tolerance mm	: +- 0.10
Del. quantity cm3/1000 strokes	: 29.5
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000S.	: +- 4.5
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
governor spring pre-tension click setting x	: 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: -
Del. quantity cm3/1000 strokes	: 242.5

Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000S.	: +- 3.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 6.5

#### CONTROL LEVER

control lever position degree	: 89.0
tolerance degree	: +- 4.0

#### RATED SPEED

rack travel mm	: 12.10
Rated speed rpm	: 760
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 800
Tolerance 1/min	: +- 5

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 900

rack travel mm	: 4.00
Rated speed rpm	: 805

#### LOW IDLE

control lever position degree	: 70.0
tolerance degree	: +- 4.0

#### Testing:

Rated speed rpm	: 350
rack travel mm	: 5.00
Tolerance mm	: +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm	: 700
rack travel mm	: 13.15
Tolerance mm	: +- 0.05

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.02.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 998  
  
Injection pump  
Pump designation : PES6P120A720RS7321  
EP type number : 0 412 726 906

Governor  
Governor design. : RQV325...875PA944  
: K  
Governor no. : 0 421 815 451

Cust. part No. : 313GC5212-P14

## Customer-spec. information

Customer : MACK  
Motor : EM7-300  
Power KW : 224.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 084  
  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 312.0

---

Tolerance  
cm3/1000 strokes : + 1.0

---

Check tolerance  
cm3/1000S. : + 4.0

---

Spread

---

Tolerance  
cm3/1000 strokes : 5.0

---

Check tolerance  
cm3/1000S. : 9.0

---

Rated speed rpm : 340

Rack travel in mm : 5.10  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 40.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 5.0

Spread

Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure  
hPa : 1200

Del. quantity  
cm3/1000 strokes : 312.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 108.0  
tolerance degree : + 6.0

#### RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 930

Tolerance 1/min : + 5

Check  
speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1115

Tolerance 1/min : + 15

Check  
speed 1/min : + 20

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1210

---

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 6.0

#### Testing:

Rated speed rpm : 340

rack travel mm : 5.10

Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 6.00

Rated speed rpm : 425

---

#### TORQUE CONTROL

Rated speed rpm : 875

rack travel mm : 14.10

Tolerance mm : + 0.05

Rated speed rpm : 510

rack travel mm : 14.85

Tolerance mm : + 0.10

Rated speed rpm : 625

rack travel mm : 14.70

Tolerance mm : + 0.20

Rated speed rpm : 400

rack travel mm : 14.25  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
  
Pressure hPa : -  
Rated speed rpm : 510  
rack travel mm : 9.20  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 510  
  
Pressure hPa : 740  
rack travel mm : 13.20  
Tolerance mm : ± 0.20

Pressure hPa : 400  
rack travel mm : 10.60  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 255

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 407.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.0

---

LOW IDLE

Rated speed rpm : 340  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.02.97  
Test oil : ISO 4113  
Combination No. : 0 403 466 127LA  
Injection pump  
Pump designation : PES6MW100/120RS1137  
: 2  
EP type number : 0 413 406 180  
Governor  
Governor design. : RSV550...1100MW2A335  
: -1  
Governor no. :  
Cust. part No. : 3926402

Customer spec. information  
Customer : CDC  
Motor : 6 CTA  
Power KW : 194.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 9.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 14.65  
Tolerance mm : ± 0.10

Del. quantity cm <sup>3</sup> /1000 strokes	: 159.0
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Spread	
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: 7.5
<hr/>	

Rated speed rpm	: 600
<hr/>	
Rack travel in mm	: 6.50
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 23.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.5
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.65
Tolerance mm	: + 0.35
<hr/>	
governor spring pre-tension click setting x	: 4.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
-----------------	--------

Aneroid pressure hPa	: 1400
Del. quantity cm <sup>3</sup> /1000 strokes	: 159.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance cm <sup>3</sup> /1000S.	: 7.5

#### CONTROL LEVER

control lever position degree	: 97.0
tolerance degree	: + 4.0

#### RATED SPEED

rack travel mm	: 13.60
Rated speed rpm	: 1165
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1250
Tolerance 1/min	: + 5

rack travel mm	: 1.00
Tolerance mm	: + 0.70
Rated speed rpm	: 1280

rack travel mm	: 4.00
Rated speed rpm	: 1260

#### LOW IDLE

control lever position degree	: 72.0
tolerance degree	: + 4.0

#### Control lever difference

Grad	: 25.0
tolerance degree	: + 4.0

#### Setting point w/out bumper spring

Rated speed rpm	: 600
rack travel mm	: 6.00
Tolerance mm	: + 0.10

Testing:

Rated speed rpm : 550  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 14.65  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1400

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 935  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 575  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1400  
Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

#### LOW IDLE

Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113  
Combination No. : 0 403 466 127LB  
Injection pump  
Pump designation : PES6MW100/120RS1137  
: 2  
EP type number : 0 403 406 180  
Governor  
Governor design. : RSV550...1100MW2A335  
: -1  
Governor no. :  
Cust. part No. : 3928960

Customer-spec. information  
Customer : CDC  
Motor : 6 CTA  
Power KW : 194.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.75  
Start of delivery blocking  
\*NW after s.o.d. : 9.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 14.65  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 6.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure  
hPa : 1400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### RATED SPEED

rack travel mm : 13.60

Rated speed rpm : 1165

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1285

Tolerance 1/min : ± 5

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1325

rack travel mm : 4.00

Rated speed rpm : 1300

#### LOW IDLE

Control lever difference

Grad : 25.0

tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 6.00

Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 475

rack travel mm : 6.50

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm	:	14.65
Tolerance mm	:	+ 0.10
Rated speed rpm	:	750
rack travel mm	:	15.20
Tolerance mm	:	+ 0.10
Rated speed rpm	:	1000
rack travel mm	:	15.20
Tolerance mm	:	+ 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm	:	600
Pressure hPa	:	1400
Pressure hPa	:	-
Rated speed rpm	:	600
rack travel mm	:	10.80
Tolerance mm	:	+ 0.10

##### MEASUREMENT

Rated speed rpm	:	600
Pressure hPa	:	935
rack travel mm	:	14.20
Tolerance mm	:	+ 0.20
Pressure hPa	:	575
rack travel mm	:	12.00
Tolerance mm	:	+ 0.05

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	1400
Rated speed rpm	:	750
Del. quantity cm3/1000 strokes	:	167.0
Tolerance cm3/1000 strokes	:	+ 2.0
Check tolerance cm3/1000S.	:	+ 5.0

Aneroid pressure hPa	:	-
Rated speed rpm	:	600
Del. quantity cm3/1000 strokes	:	101.0

Tolerance cm3/1000 strokes	:	+ 1.0
Check tolerance cm3/1000S.	:	+ 3.0

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.00
Tolerance mm	:	+ 1.00
Del. quantity cm3/1000 strokes	:	140.0
Tolerance cm3/1000 strokes	:	+ 10.0
Check tolerance cm3/1000S.	:	+ 13.0

#### LOW IDLE

Rated speed rpm	:	475
Del. quantity cm3/1000 strokes	:	23.0
Tolerance cm3/1000 strokes	:	+ 2.0
Check tolerance cm3/1000S.	:	+ 4.5
Speed	:	
Tolerance cm3/1000 strokes	:	3.5
Check tolerance cm3/1000S.	:	5.5

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.11.95  
Test oil : ISO 4113

Combination No. : 9 400 230 103

Injection pump  
Pump designation : PES6A100D410RS2691  
EP type number : 9 410 230 028

Governor  
Governor design. : RQV350...1100AB1227R  
Governor no. : 9 420 231 015

Cust. part No. : 3912645

Customer-spec. information  
Customer : CDC  
Motor : 6 CT 8.3  
Power KW : 156.6

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 350

Rack travel in mm : 5.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.40  
Tolerance mm : ± 0.20

Rated speed rpm : 1100  
guide sleeve  
travel mm : 7.70

Rated speed rpm : 1150  
guide sleeve  
travel mm : 8.30  
Tolerance mm : ± 0.30

Rated speed rpm : 1290  
guide sleeve  
travel mm : 9.80  
Tolerance mm : ± 0.30

Rated speed rpm : 600  
guide sleeve  
travel mm : 4.20  
Tolerance mm : ± 0.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.60  
Rated speed rpm : 1150  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1275  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

rack travel mm : 4.00

##### LOW IDLE

control lever  
position degree : 63.0  
tolerance degree : ± 4.0

##### Control lever difference

Grad : 51.0  
tolerance degree : ± 4.0

### Testing:

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.65  
Tolerance mm :  $\pm$  0.05

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : -

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.10

### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 535  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 405  
rack travel mm : 10.95  
Tolerance mm :  $\pm$  0.05

### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  260

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  280

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.96  
Test oil : ISO 4113  
Combination No. : 9 400 230 119  
Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -2  
EP type number : 9 410 230 028  
Governor  
Governor design. : RQV350...1250AB1235R  
Governor no. : 9 420 231 020

Cust. part No. : 3912636

Customer-spec. information  
Customer : CDC  
Motor : 6 CT-830  
Power KW : 157.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 11.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 350

Rack travel in mm : 4.90  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1394  
guide sleeve  
travel mm : 8.58  
Tolerance mm : ± 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.54  
Tolerance mm : ± 0.25

Rated speed rpm : 922  
guide sleeve  
travel mm : 5.37  
Tolerance mm : ± 0.25

Rated speed rpm : 453  
guide sleeve  
travel mm : 1.96

Tolerance mm : ± 0.25

Rated speed rpm : 503  
guide sleeve  
travel mm : 2.57  
Tolerance mm : ± 0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 3.10  
Tolerance mm : ± 0.25

Rated speed rpm : 1680  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1550

Rack travel in mm : 8.00  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

##### CONTROL LEVER

control lever  
position degree : 100.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.90  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1430  
Tolerance 1/min : + 15  
  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1500

---

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 3.0

Control lever difference  
Grad : 35.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.90  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 7.80

Rated speed rpm : 425

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.95  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 12.40  
Tolerance mm : + 0.10

Rated speed rpm : 1200  
rack travel mm : 11.95  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.40  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500

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Pressure hPa : 700

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.80  
Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 390  
rack travel mm : 11.40  
Tolerance mm : + 0.20

Pressure hPa : 200  
rack travel mm : 9.85  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 67.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.70  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 15.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113

Combination No. : 0 400 075 926Y

Injection pump  
Pump designation : PES5M55C320RS201  
EF type number : 0 410 055 972Y

Governor  
Governor design. : RSF250/2500M75-3  
Governor no. : 0 420 021 173

Cust. part No. :

## Customer-spec. information

Customer : MB-PKW  
Motor : OM605  
Power KW : 83.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde  
assembly : 1 688 901 111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

\*NW after s.o.d. : 16.50  
Tolerance : ± 0.20  
Check  
tolerance \*NW : ± 0.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 37.0

Tolerance  
cm3/1000 strokes : ± 0.5

Check tolerance  
cm3/1000s. : ± 1.5

Spread  
Tolerance  
cm3/1000 strokes : 2.5

Check tolerance  
cm3/1000S. : 3.0

Rated speed rpm : 350

Rack travel in mm : 7.40  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm3/1000 strokes : 8.5

Tolerance  
cm3/1000 strokes :  $\pm$  0.5

Spread  
Tolerance  
cm3/1000 strokes : 1.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### IDLE STAGE

Rack travel in mm : 6.25  
Tolerance mm :  $\pm$  0.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Ref. pressure  
ALDA / ADA hPa : 1100

Del. quantity  
cm3/1000 strokes : 37.0

Tolerance  
cm3/1000 strokes :  $\pm$  0.5

Check tolerance  
cm3/1000S. :  $\pm$  1.5

Spread  
Tolerance

cm3/1000 strokes : 2.5

Check tolerance  
cm3/1000S. : 3.0

##### RATED SPEED

Tolerance mm :  $\pm$  0.30

Rated speed rpm : 3150

rack travel mm : 0.50

Tolerance mm :  $\pm$  0.50

##### SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1400

CRT mm max. : 1.95

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 7.40

##### SET IDLE AUXILIARY SPRING

Rated speed rpm : 475

rack travel mm : 5.40

Tolerance mm :  $\pm$  0.10

##### Load pick-up

Rated speed rpm : 1400

CRT mm max. : 1.95

rack travel mm : 7.40

Rated speed rpm : 350

##### TORQUE CONTROL

Rated speed rpm : 1400

rack travel mm : 12.75

Tolerance mm :  $\pm$  0.05

Rated speed rpm : 2300

rack travel mm : 12.30

Tolerance mm :  $\pm$  0.15

Rated speed rpm : 2500

rack travel mm : 11.90

Tolerance mm :  $\pm$  0.15

##### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1400

Ref. pressure

ALDA / ADA hPa : 940

rack travel mm : -0.10

Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 1400

Ref. pressure

ALDA / ADA hPa : 900

rack travel mm : -0.40

Tolerance mm :  $\pm$  0.10

Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : + 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : + 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Ref. pressure  
ALDA / ADA hPa : 1100  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.60

Tolerance mm : + 1.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

control lever  
position degree : > 49.00

control lever  
position degree : < 46.50

---

#### SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

Rated speed rpm : 400  
Rack travel in mm : 8.25  
Tolerance mm : + 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Vacuum hPa : 450.0

---

#### ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1400  
rack travel mm : 1.70  
Tolerance mm :  $\pm$  0.15

---

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 350  
Vacuum hPa : -450.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 076 954Y  
  
Injection pump  
Pump designation : PES6M55C320RS203  
EP type number : 0 410 056 982Y  
  
Governor  
Governor design. : RSF315/2500M70-10  
Governor no. : 0 420 021 175

Cust. part No. :

## Customer-spec. information

Customer : MB-PKW  
Motor : OM606  
Power KW : 100.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde  
assembly : 1 688 901 111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 16.50  
Tolerance : ± 0.20  
Check  
tolerance \*NW : ± 0.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : ± 1.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Rated speed rpm : 290

Rack travel in mm : 7.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### IDLE STAGE

Rack travel in mm : 6.25  
Tolerance mm : ± 0.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Ref. pressure  
ALDA / ADA hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

##### RATED SPEED

Tolerance mm : ± 0.10

Rated speed rpm : 3000

rack travel mm : 1.00

Tolerance mm : ± 1.00

##### SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1100

CRT mm max. : 1.95

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 290

rack travel mm : 7.30

##### SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 6.00

Tolerance mm : ± 0.10

##### Load pick-up

Rated speed rpm : 1100

CRT mm max. : 1.95

rack travel mm : 7.30

Rated speed rpm : 290

##### TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 13.35

Tolerance mm : ± 0.05

Rated speed rpm : 2000

rack travel mm : 12.75

Tolerance mm : ± 0.15

Rated speed rpm : 2500

rack travel mm : 12.25

Tolerance mm : ± 0.15

Rated speed rpm : 500

rack travel mm : 12.50

Tolerance mm : ± 0.15

##### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1100

Ref. pressure

ALDA / ADA hPa : 940

rack travel mm : -0.10

Tolerance mm : ± 0.10

##### MEASUREMENT

Rated speed rpm : 1100

Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.40  
Tolerance mm : + 0.10

Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : + 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.1  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : + 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.9  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : + 1.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Ref. pressure  
ALDA / ADA hPa : 1100  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.60  
Tolerance mm : + 1.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 59.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.5

---

#### LOW IDLE

Rated speed rpm : 290  
rack travel mm : 7.50  
Tolerance mm : + 0.15  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

#### SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Rated speed rpm : 315

Rack travel in mm : 13.20  
Tolerance mm : + 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.5

Current A : 1.80

Rated speed rpm : 3000

Rack travel in mm : 1.00  
Tolerance mm : + 1.00

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

---

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 290  
Vacuum hPa : -450.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113

Combination No. : 0 400 076 955Y

Injection pump  
Pump designation : PES6M55C320RS203  
EP type number : 0 410 056 982Y

Governor  
Governor design. : RSF315/2500M76  
Governor no. : 0 420 021 174

Cust. part No. :

Customer-spec. information  
Customer : MB-PKW  
Motor : OM606  
Power kW : 100.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1 688 901 111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 16.50  
Tolerance : ± 0.20  
Check  
tolerance \*NW : ± 0.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Rated speed rpm : 300

Rack travel in mm : 7.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### IDLE STAGE

Rack travel in mm : 6.25  
Tolerance mm : ± 0.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Ref. pressure

ALDA / ADA hPa : 1100  
Del. quantity

cm<sup>3</sup>/1000 strokes : 39.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance

cm<sup>3</sup>/1000S. : ± 1.5  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

##### RATED SPEED

Tolerance mm : ± 0.10

Rated speed rpm : 3000  
rack travel mm : 1.00  
Tolerance mm : ± 1.00

##### SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1100

CRT mm max. : 1.95

##### LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 7.30

##### SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
rack travel mm : 6.00  
Tolerance mm : ± 0.10

##### Load pick-up

Rated speed rpm : 1100

CRT mm max. : 1.95

rack travel mm : 7.30  
Rated speed rpm : 300

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.35  
Tolerance mm : ± 0.05

Rated speed rpm : 2000  
rack travel mm : 12.75  
Tolerance mm : ± 0.15

Rated speed rpm : 2500  
rack travel mm : 12.25  
Tolerance mm : ± 0.15

Rated speed rpm : 500  
rack travel mm : 12.50  
Tolerance mm : ± 0.15

##### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 940  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

##### MEASUREMENT

Rated speed rpm : 1100

Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.40  
Tolerance mm :  $\pm$  0.10

Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm :  $\pm$  0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.1  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.8  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.6  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.8  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  1.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Ref. pressure  
ALDA / ADA hPa : 1100  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.60  
Tolerance mm :  $\pm$  1.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.30  
Tolerance mm :  $\pm$  0.15  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

#### SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Rated speed rpm : 315

Rack travel in mm : 13.20  
Tolerance mm :  $\pm$  0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.5

Current A : 1.80

Rated speed rpm : 3000

Rack travel in mm : 1.00  
Tolerance mm :  $\pm$  1.00

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

---

#### ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1100  
rack travel mm : 1.70  
Tolerance mm :  $\pm$  0.20

---

#### TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 300  
Vacuum hPa : -450.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.01.97  
Test oil : ISO 4113  
Combination No. : 0 402 646 649  
Injection pump  
Pump designation : PE6P130A720RS7339  
EP type number : 0 412 636 833  
Governor  
Governor design. : RQV300...950PA905-1  
Governor no. : 0 421 814 097

Cust. part No. :

Customer-spec. information  
Customer : IVECO-AIFO  
Motor : 8210.SRI  
Power KW : 353.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 14.00  
Tolerance mm : + 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50  
Start of delivery mark  
Check  
tolerance °NW : + 0.40  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 300  
Rack travel in mm : 4.70  
Tolerance mm : + 0.10  
Del. quantity  
cm3/1000 strokes : 24.0  
Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 7.0  
Spreed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.75  
Tolerance mm : + 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.81  
Tolerance mm : + 0.20

Rated speed rpm : 409  
guide sleeve  
travel mm : 2.86  
Tolerance mm : + 0.25

Rated speed rpm : 459  
guide sleeve  
travel mm : 3.29  
Tolerance mm : + 0.25

Rated speed rpm : 720  
guide sleeve  
travel mm : 4.94  
Tolerance mm : + 0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1090  
Rack travel in mm : 12.90  
Tolerance mm : + 1.30

##### CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 12.90  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1115  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

rack travel mm : 4.00

##### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 4.70  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 6.20

Rated speed rpm : 430

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.95  
Tolerance mm : + 0.05

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350  
rack travel mm : 10.75  
Tolerance mm : + 0.10

Pressure hPa : 520

rack travel mm : 12.95  
Tolerance mm :  $\pm$  0.05

Start interlock

Rated speed rpm : > 100

Check  
speed 1/min : > 80

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.02.97  
Test oil : ISO 4113

Combination No. : 0 402 546 574

Injection pump  
Pump designation : PE6P120A320RS7300  
EP type number : 0 412 626 886

Governor  
Governor design. : RQV275...1000PA1332K  
Governor no. : 0 421 815 551

Cust. part No. : 1322503

Customer spec. information  
Customer : DAF  
Motor : WS 242 M  
Power kW : 242.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.35  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 15.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 15.05  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 228.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: 5.30
Tolerance mm	: +- 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 17.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance cm <sup>3</sup> /1000S.	: + 6.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1050
guide sleeve travel mm	: 7.41
Tolerance mm	: + 0.15
Rated speed rpm	: 275
guide sleeve travel mm	: 2.04
Tolerance mm	: + 0.20
Rated speed rpm	: 820
guide sleeve travel mm	: 5.14
Tolerance mm	: + 0.25
Rated speed rpm	: 480

guide sleeve travel mm	: 3.34
Tolerance mm	: + 0.25
Rated speed rpm	: 1282
guide sleeve travel mm	: 12.00
Tolerance mm	: + 0.25
Rated speed rpm	: 1370
guide sleeve travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1240
Rack travel in mm	: 14.20
Tolerance mm	: + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 980
Aneroid pressure hPa	: 1500
Del. quantity cm <sup>3</sup> /1000 strokes	: 228.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 112.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 14.05
Rated speed rpm	: 1040
Tolerance 1/min	: + 5
Check speed 1/min	: + 10
rack travel mm	: 4.00
Rated speed rpm	: 1165

Tolerance 1/min :  $\pm$  15  
 Check  
 speed 1/min :  $\pm$  20  
 rack travel mm : 0.70  
 Tolerance mm :  $\pm$  0.70  
 Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
 position degree : 75.0  
 tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
 rack travel mm : 5.30  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 175  
 CRT mm min. :  $>$  8.50

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 980  
 rack travel mm : 15.05  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
 rack travel mm : 14.95  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
 rack travel mm : 14.60  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
 rack travel mm : 14.40  
 Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 980  
 Pressure hPa : 1500  
 rack travel mm : 15.05  
 Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
 Rated speed rpm : 980  
 rack travel mm : 12.30  
 Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 480  
 rack travel mm : 14.35  
 Tolerance mm :  $\pm$  0.05

Pressure hPa : 270  
 rack travel mm : 12.90  
 Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 750  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 238.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. :  $\pm$  5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 157.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### LOW IDLE

Rated speed rpm : 275  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113

Combination No. : 0 402 646 997A

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0 412 626 871

Governor  
Governor design. : RQV300...950PA1033  
Governor no. : 0 421 814 008

Cust. part No. : 0230744302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: 0-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.55  
Tolerance mm : ± 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm : ± 0.20

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm : ± 0.25

Rated speed rpm : 617  
guide sleeve  
travel mm : 5.23

Tolerance mm : ± 0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.31  
Tolerance mm : ± 0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1040

Rack travel in mm : 14.10  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 122.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 14.10  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1100  
Tolerance 1/min : + 15  
  
rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 200  
  
CRT mm min. : > 8.50  
  
Rated speed rpm : 325

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.10  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 15.10  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 15.10  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.15  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 150  
rack travel mm : 10.05  
Tolerance mm : + 0.20

Pressure hPa : 550  
rack travel mm : 13.85  
Tolerance mm : + 0.20

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.03.97  
Test oil : ISO 4113

Combination No. : 0 402 676 837

Injection pump  
Pump designation : PE6P120A320LS7909  
EP type number : 0 412 626 963

Governor  
Governor design. : RSV550...900POA670  
Governor no. : 0 421 833 588

Cust. part No. : 0270743502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 236.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 15.20  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 240.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Speed	
Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

Rated speed rpm : 550

Rack travel in mm : 4.60  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : ± 0.20

governor spring  
 pre-tension  
 click setting x : 2.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880

Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 240.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
 position degree : 86.0  
 tolerance degree : ± 4.0

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 930  
 rack travel mm : 14.20

Rated speed rpm : 975  
 Tolerance 1/min : ± 4  
 rack travel mm : 4.00

rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1300

Rated speed rpm : 931  
 rack travel mm : 14.20

Rated speed rpm : 976  
 Tolerance 1/min : ± 4  
 rack travel mm : 4.00

rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1300

Rated speed rpm : 932  
 rack travel mm : 14.20

Rated speed rpm : 977  
 Tolerance 1/min : ± 4  
 rack travel mm : 4.00

rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1300

Rated speed rpm : 933  
rack travel mm : 14.20

Rated speed rpm : 978  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1300

Rated speed rpm : 934  
rack travel mm : 14.20

Rated speed rpm : 979  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1300

Rated speed rpm : 935  
rack travel mm : 14.20

Rated speed rpm : 980  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1300

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 550  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 565  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100

CRT mm min. :  $>$  19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

#### TORQUE CONTROL

Rated speed rpm : 880  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 15.20  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.45  
Tolerance mm :  $\pm$  0.15

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 300  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 400  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.15

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 15.0

---

#### LOW IDLE

Rated speed rpm : 550

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113

Combination No. : 0 402 696 031

Injection pump  
Pump designation : PE6H120/320LS4  
EP type number : 0 412 626 001

Governor  
Governor design. : RE36  
Governor no. : 0 421 890 353

Cust. part No. :

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM 441 LA  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 6

## (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

## TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(ALL P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

Rated speed rpm : 750  
Uact V : 3.000  
Prestroke solenoid  
Stroke mm : 7.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 375.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050  
Uact V : 3.000  
Prestroke solenoid  
Stroke mm : 7.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 339.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0

Rated speed rpm : 550  
Uact V : 2.800  
Prestroke solenoid  
Stroke mm : 8.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 367.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0

# TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	:	+ 0.060
Check tolerance		
Volt	:	+ 0.060
Prestroke solenoid		
Stroke mm	:	8.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	25.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 3.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance		
cm <sup>3</sup> /1000s.	:	12.0

## STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	10.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	106.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 6.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113

Combination No. : 0 402 696 032

Injection pump  
Pump designation : PE6H120/320LS4-1  
EP type number : 0 412 626 002

Governor  
Governor design. : RE36  
Governor no. : 0 421 890 359

Cust. part No. : 0250746402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 441 LA

## TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 6

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

# TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

Rated speed rpm : 750  
Uact V : 3.000  
Prestroke solenoid  
Stroke mm : 7.00  
Del. quantity  
cm3/1000 strokes : 375.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000S. : +/- 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050  
Uact V : 3.000  
Prestroke solenoid  
Stroke mm : 7.00  
Del. quantity  
cm3/1000 strokes : 339.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0

Rated speed rpm : 550  
Uact V : 2.800  
Prestroke solenoid  
Stroke mm : 8.70  
Del. quantity  
cm3/1000 strokes : 367.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	:	+ 0.060
Check tolerance		
Volt	:	+ 0.060
Prestroke solenoid		
Stroke mm	:	8.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	25.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 3.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	12.0

---

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	10.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	106.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113

Combination No. : 0 402 698 031

Injection pump  
Pump designation : PE8H120/320LS3  
EP type number : 0 412 628 001

Governor  
Governor design. : RE36  
Governor no. : 0 421 890 353

Cust. part No. :

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM 442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 4- 1

Phasing : 0-45-90-135-180  
          : -270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

## (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

# TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

Rated speed rpm : 750  
Uact V : 2.800  
Prestroke solenoid  
Stroke mm : 7.40  
Del. quantity  
cm3/1000 strokes : 341.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000S. : +/- 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Uact V : 2.900  
Prestroke solenoid  
Stroke mm : 8.00  
Del. quantity  
cm3/1000 strokes : 333.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0

Rated speed rpm : 550  
Uact V : 2.700  
Prestroke solenoid  
Stroke mm : 9.50  
Del. quantity  
cm3/1000 strokes : 351.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000S. : +/- 6.0

# TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	:	+ 0.060
Check tolerance		
Volt	:	+ 0.060
Prestroke solenoid		
Stroke mm	:	8.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	23.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 3.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance		
cm <sup>3</sup> /1000s.	:	12.0

## STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	10.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	108.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113  
Combination No. : 0 402 698 032

Injection pump  
Pump designation : PE8H120/320LS3-1  
EP type number : 0 412 628 002

Governor  
Governor design. : RE36  
Governor no. : 0 421 890 359

Cust. part No. : 0250746502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 442 LA

## TEST BENCH REQUIREMENTS

Inlet line : 3.2 EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 7.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 4- 1

Phasing : 0-45-90-135-180  
: -270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

## (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

# TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

## (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

Rated speed rpm : 750  
Uact V : 2.800  
Prestroke solenoid  
Stroke mm : 7.40  
Del. quantity  
cm3/1000 strokes : 341.0  
Tolerance  
cm3/1000 strokes : +/- 1.0  
Check tolerance  
cm3/1000s. : +/- 4.0  
Speed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000s. : 9.0

### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Uact V : 2.900  
Prestroke solenoid  
Stroke mm : 8.00  
Del. quantity  
cm3/1000 strokes : 333.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000s. : +/- 6.0

Rated speed rpm : 550  
Uact V : 2.700  
Prestroke solenoid  
Stroke mm : 9.50  
Del. quantity  
cm3/1000 strokes : 351.0  
Tolerance  
cm3/1000 strokes : +/- 3.0  
Check tolerance  
cm3/1000s. : +/- 6.0

TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	:	+ 0.060
Check tolerance		
Volt	:	+ 0.060
Prestroke solenoid		
Stroke mm	:	8.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	23.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 3.0
Speed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	12.0

---

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	10.00
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	108.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.02.97  
Test oil : ISO 4113

Combination No. : 0 402 746 629

Injection pump  
Pump designation : PES6P120A320RS7324  
EP type number : 0 412 726 905

Governor  
Governor design. : RQ300/1200PA1335  
Governor no. : 0 421 801 816

Cust. part No. : 51.11103-7565

## Customer spec. information

Customer : MAN  
Motor : D 0826 LOH 15  
Power KW : 162.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 175  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1245  
guide sleeve  
travel mm : 6.37  
Tolerance mm : ± 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.97  
Tolerance mm : ± 0.20

Rated speed rpm : 1200  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 366  
guide sleeve  
travel mm : 4.60

Tolerance mm : ± 0.10

Rated speed rpm : 460  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1420  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever  
position degree : 93.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.45  
Rated speed rpm : 1245  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1330  
Tolerance 1/min : ± 15

rack travel mm : 0.25  
Tolerance mm : ± 0.25

Rated speed rpm : 1460

---

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 365  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  8.20

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140  
rack travel mm : 8.95  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 700  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.15

#### Start interlock

Rated speed rpm :  $>$  215  
Rated speed rpm :  $<$  240

Check  
speed 1/min :  $>$  195  
Check  
speed 1/min :  $<$  260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 04.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 951

Injection pump  
Pump designation : PES6P120A720RS7292  
EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1074K  
Governor no. : 0 421 815 355

Cust. part No. : 0240747902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 127.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 3.30  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.20  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1205  
guide sleeve  
travel mm : 9.35  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm : + 0.20

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm : + 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.17  
Tolerance mm : + 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1329

Rack travel in mm : 13.00  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever  
position degree : 109.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 13.20  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1320  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1400

---

## LOW IDLE

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  6.88

Rated speed rpm : 400

---

## TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.15

### MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 350

rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 850  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.15

### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  250

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  290

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 956

Injection pump  
Pump designation : PES6P120A720RS7292  
EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1074  
: 1K  
Governor no. : 0 421 815 365

Cust. part No. : 0250740902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 142.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

L01

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 3.30  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.20  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206  
guide sleeve  
travel mm : 9.35  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm : + 0.20

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm : + 0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 3.09  
Tolerance mm : + 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1331

Rack travel in mm : 13.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever  
position degree : 109.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 13.50  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1325  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1400

---

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.90

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.20  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.00  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.20  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.50  
Tolerance mm : ± 0.15

#### MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 350

L03

rack travel mm : 11.10  
Tolerance mm : ± 0.05

Pressure hPa : 850  
rack travel mm : 13.00  
Tolerance mm : ± 0.15

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 240

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 957

Injection pump  
Pump designation : PES6P120A720RS7292  
EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1074  
: 2K  
Governor no. : 0 421 815 367

Cust. part No. : 0250741002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 157.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

L05

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 3.30  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.10  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206  
guide sleeve  
travel mm : 9.35  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.17  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1331

Rack travel in mm : 13.50  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### CONTROL LEVER

control lever  
position degree : 109.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1325  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1400

---

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  6.90

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.10  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.10  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.10  
Tolerance mm :  $\pm$  0.15

#### MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 400

L07

rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 850  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.15

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  200

Check  
speed 1/min :  $>$  80  
Check  
speed 1/min :  $<$  250

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.02.97  
Test oil : ISO 4113

Combination No. : 0 402 746 967

Injection pump  
Pump designation : PES6P120A32GRS7324  
EP type number : 0 412 726 905

Governor  
Governor design. : RQ300/1200PA1132  
Governor no. : 0 421 801 708

Cust. part No. : 51.11103-7296

Customer-spec. information  
Customer : MAN  
Motor : D0826LF11/LFL03  
Power KW : 162.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 175  
Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1257  
guide sleeve

travel mm : 6.37  
Tolerance mm : ± 0.10

Rated speed rpm : 300

guide sleeve  
travel mm : 1.41

Tolerance mm : ± 0.10

Rated speed rpm : 1200

guide sleeve  
travel mm : 6.00

Tolerance mm : ± 0.10

Rated speed rpm : 425

guide sleeve  
travel mm : 4.31

Tolerance mm : ± 0.10

Rated speed rpm : 530

guide sleeve  
travel mm : 6.00

Tolerance mm : ± 0.10

Rated speed rpm : 1430

guide sleeve  
travel mm : 11.50

Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever

position degree : 109

Rated speed rpm : 600

Rack travel in mm : 20.00

Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever

position degree : 97.0

tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.45

Rated speed rpm : 1245

Tolerance 1/min : ± 8

rack travel mm : 4.00

Rated speed rpm : 1328

Tolerance 1/min : ± 15

rack travel mm : 0.25

Tolerance mm : ± 0.25

Rated speed rpm : 1460

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 375  
Tolerance 1/min : ± 30

Rated speed rpm : 250

CRT mm min. : > 6.50

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 12.45  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 12.45  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 12.45  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.45  
Tolerance mm : ± 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm : ± 0.20

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140  
rack travel mm : 8.95  
Tolerance mm : ± 0.05

Pressure hPa : 700  
rack travel mm : 11.75  
Tolerance mm : ± 0.15

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 19.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113

Combination No. : 0 403 476 148

Injection pump  
Pump designation : PES6MW100/720RS1131  
EP type number : 0 413 406 123

Governor  
Governor design. : RSV350...1200MW0A405  
Governor no. : 0 420 085 294

Cust. part No. : 0270741802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 366 A  
Power KW : 118.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm : 11.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.25

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

### (3) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 5.25

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180  
Aneroid pressure  
hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### CONTROL LEVER

control lever  
position degree : 107.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.65  
Rated speed rpm : 1233  
Tolerance 1/min : ± 3

rack travel mm : 4.00  
Rated speed rpm : 1315  
Tolerance 1/min : ± 5

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1400

---

#### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.30  
Tolerance mm : ± 0.25

rack travel mm : 2.00  
Rated speed rpm : 450  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1180  
rack travel mm : 11.65  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1100

rack travel mm : 11.75  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 12.00  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 500  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 350  
rack travel mm : 1.10  
Tolerance mm : + 0.10

Pressure hPa : 275  
rack travel mm : 0.65  
Tolerance mm : + 0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.03.97  
Test oil : ISO 4113

Combination No. : 0 400 863 024

Injection pump  
Pump designation : PES3A95D410/3RS2905  
EP type number : 0 410 893 996

Governor  
Governor design. : RSV325...1250A5C917L  
Governor no. : 0 420 232 639

Cust. part No. : 0423 2328 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F3L912  
Power KW : 44.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.9

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1340  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

---

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 475  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.00  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.9

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 400 864 102

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...1250A5C861L  
Governor no. : 0 420 232 624

Cust. part No. : 0423 1789 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F4L912/913\_NEU  
Power kW : 59.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.05  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm3/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50  
Tolerance mm : ± 0.10

Del. quantity  
cm3/1000 strokes : 11.5

Tolerance  
cm3/1000 strokes : ± 2.0

Check tolerance  
cm3/1000S. : ± 4.5

Speed  
Tolerance  
cm3/1000 strokes : 5.5

Check tolerance  
cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 76.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 3.0

Speed  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 10.35  
Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1339

Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55

Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

---

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00

Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50

Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 473

Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 400 864 104

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...1250A5C877L  
Governor no. : 0 420 232 632

Cust. part No. : 0423 2047 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : BF4L 913 C  
Power KW : 78.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.70

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1350

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1520

rack travel mm : 4.00

Rated speed rpm : 1370

---

##### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 8.00

Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 325

rack travel mm : 8.50

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 480

Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 400 864 105

Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995

Governor  
Governor design. : RSV325...900A1C878L  
Governor no. : 0 420 232 633

Cust. part No. : 0423 2062 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : BF4L 913  
Power KW : 64.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.25

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### CONTROL LEVER

control lever  
position degree : 89.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 12.30  
Rated speed rpm : 895

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 940

Tolerance 1/min : ± 10

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1090

rack travel mm : 4.00

Rated speed rpm : 955

---

#### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 7.75

Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 325

rack travel mm : 8.20

rack travel mm : 2.00

Rated speed rpm : 415

Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

#### TORQUE CONTROL

Rated speed rpm : 850

rack travel mm : 13.30

Rated speed rpm : 500

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 400 864 107

Injection pump  
Pump designation : PES4A95D410/3RS2913  
EP type number : 0 410 894 986

Governor  
Governor design. : RSV325...900A1C859L  
Governor no. : 0 420 232 622

Cust. part No. : 0423 2225 KY

Customer spec. information  
Customer : KHD-DMI  
Motor : F4L912/Neu.compr

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-90-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.80  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 80.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 3.0

## Speed

Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 7.90  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 2.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
position degree : 90.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : 10.80  
Rated speed rpm : 895  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 920  
Tolerance 1/min :  $\pm$  10

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1090

rack travel mm : 4.00  
Rated speed rpm : 940

---

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 7.40  
Tolerance mm :  $\pm$  0.10

Testing:

Rated speed rpm : 325  
rack travel mm : 7.90  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100

CRT mm min. :  $>$  19.50

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.03.97  
Test oil : ISO 4113

Combination No. : 0 400 865 028

Injection pump  
Pump designation : PESSA95D410/3RS2906  
EP type number : 0 410 895 971

Governor  
Governor design. : RSV325...1250A5C858L  
Governor no. : 0 420 232 621

Cust. part No. : 0423 1598 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F5L912/913\_NEU  
Power KW : 67.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 9.80  
Rated speed rpm : 1295  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 482  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.97  
Test oil : ISO 4113

Combination No. : 0 400 866 222

Injection pump  
Pump designation : PES6A95D410/3RS2907  
EP type number : 0 410 896 884

Governor  
Governor design. : RSV325...1250A5C858L  
Governor no. : 0 420 232 621

Cust. part No. : 0423 1601 KY

## Customer-spec. information

Customer : KHD-DMI  
Motor : F6L912/913\_NEU  
Power KW : 81.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 473  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.97  
Test oil : ISO 4113  
Combination No. : 0 400 866 223  
Injection pump  
Pump designation : PES6A95D410/3RS2907  
EP type number : 0 410 896 884  
Governor  
Governor design. : RSV325...900A1C859L  
Governor no. : 0 420 232 622

Cust. part No. : 0423 1602 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F6L912/913\_NEU  
Power KW : 81.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850  
Rack travel in mm : 11.80  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 7.90

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 90.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 10.80  
Rated speed rpm : 895  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 920  
Tolerance 1/min : ± 10

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1090

rack travel mm : 4.00  
Rated speed rpm : 940

##### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 7.40  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 325  
rack travel mm : 7.90

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

Rated speed rpm : 500

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.97  
Test oil : ISO 4113  
Combination No. : 0 400 866 224  
Injection pump  
Pump designation : PES6A95D410/3RS2907  
EP type number : 0 410 896 884  
Governor  
Governor design. : RSV325...1250A5C860L  
Governor no. : 0 420 232 623

Cust. part No. : 0423 1812 KY

## Customer-spec. information

Customer : KHD-DMI  
Motor : F6L912/913\_NEU  
Power KW : 89.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 11.5

Tolerance

cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 473  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.03.97  
Test oil : ISO 4113  
Combination No. : 0 400 866 225  
Injection pump  
Pump designation : PES6A95L410/3RS2907  
EP type number : 0 410 896 884  
Governor  
Governor design. : RSV325...1250A5C861L  
Governor no. : 0 420 232 624

Cust. part No. : 0423 1813 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F6L912/913\_NEU  
Power kW : 89.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 11.35  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.35  
Rated speed rpm : 1295  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1339  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1510

rack travel mm : 4.00  
Rated speed rpm : 1360

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 325  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 473  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.97  
Test oil : ISO 4113

Combination No. : 0 400 866 231

Injection pump  
Pump designation : PES6A95D410/3RS2907  
EP type number : 0 410 896 884

Governor  
Governor design. : RSV325...900A1C875L  
Governor no. : 0 420 232 630

Cust. part No. : 0423 2058 KY

## Customer-spec. information

Customer : KHD-DMI  
Motor : BF6L 913/C  
Power KW : 112.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.80

Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
position degree : 89.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 12.80  
Rated speed rpm : 895  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 920  
Tolerance 1/min : ± 10

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1095

rack travel mm : 4.00  
Rated speed rpm : 945

#### LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 7.70  
Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 8.20

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

#### TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.80

Rated speed rpm : 500

Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 196 712  
Injection pump  
Pump designation : PES6P110A320RS3386  
EP type number : 0 412 016 757  
Governor  
Governor design. : RE30  
Governor no. : 0 421 890 044

Cust. part No. : RE 69563

Customer-spec. information  
Customer : DEERE  
Motor : 6068HDW55  
Power KW : 127.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 077  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 015  
Outside diameter : 6.0

M21

x inside diameter : 3.0  
x length mm : 600

## REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 6.50  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende  
and maximum rack  
travel : 15.00  
Tolerance mm : ± 0.50  
Difference \* CS : 2.00

---

### (B) POSITIONER TESTING

Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

#### TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min<sup>-1</sup>: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min<sup>-1</sup>: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

### (C) INJECTION PUMP WITH POSITIONER

#### TEST POINT V1

Rated speed rpm : 1000  
Uact V : 3.180  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 600  
Uact V : 3.180  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0  
Rated speed rpm : 400  
Uact V : 1.590  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 400  
Uact V : 1.590  
Tolerance Volt : ± 0.060  
Check tolerance  
Volt : ± 0.060

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Uact V : 4.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.97  
Test oil : ISO 4113

Combination No. : 9 400 030 720

Injection pump  
Pump designation : PES6A95D320/3RS2895  
EP type number : 9 410 037 238

Governor  
Governor design. : RSV475...1250A0C833R  
Governor no. : 9 420 034 703

Cust. part No. : 3928595

Customer-spec. information  
Customer : CDC  
Motor : 6BTA  
Power KW : 130.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.70  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 9.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.70

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### CONTROL LEVER

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 11.50

Rated speed rpm : 1320

Tolerance 1/min : ± 5

rack travel mm : 5.50

Rated speed rpm : 1390

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1475

rack travel mm : 5.50

Rated speed rpm : 1390

#### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 27.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.20

Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 475  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 480  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 350  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 72.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 475  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.97  
Test oil : ISO 4113

Combination No. : 9 400 030 734GA

Injection pump  
Pump designation : PES4A95D320/3RS2880  
EP type number : 9 410 037 214

Governor  
Governor design. : RSM475...1100A0C847R  
Governor no. : 9 420 034 713

Cust. part No. : 3933290

Customer-spec. information  
Customer : CDC  
Motor : 4ST3.9  
Power KW : 74.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 2.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

Rated speed rpm : 500

Rack travel in mm : 5.65  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

#### CONTROL LEVER

control lever  
position degree : 101.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 11.70  
Rated speed rpm : 1165  
Tolerance 1/min : ± 5

rack travel mm : 6.00  
Rated speed rpm : 1230  
Tolerance 1/min : ± 5

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1375

rack travel mm : 6.00  
Rated speed rpm : 1230

#### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 20.0  
tolerance degree : ± 6.0

#### Setting point w/out bumper spring

Rated speed rpm : 500  
rack travel mm : 5.15  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 500  
rack travel mm : 5.65  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. :  $>$  19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 750  
Pressure hPa : 1000

Pressure hPa : -  
Rated speed rpm : 750  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 750  
Pressure hPa : 440  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.20

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Aneroid pressure  
hPa : -

N01

Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 96.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  15.0

---

#### LOW IDLE

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 046 864  
Injection pump  
Pump designation : PES6P120A320RS3337  
EP type number : 0 412 026 772  
Governor  
Governor design. : RQV300...1250PA1149  
: 1K  
Governor no. : 0 421 815 421  
Cust. part No. : CCEP 5142A 66-219

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 06-02-26 W4  
Power KW : 155.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 084  
Inlet press. bar : 2.5  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 089  
Outside diameter : 8.0

N02

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 13.00  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.35  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 13.00  
Difference °CS : 2.00

## CRT ZERO POSITION

Rack travel in mm : 13.10  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 1250

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : -8.30  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1328  
guide sleeve  
travel mm : 9.98  
Tolerance mm :  $\pm$  0.15

---

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.31  
Tolerance mm :  $\pm$  0.20

NO3

Rated speed rpm : 876  
guide sleeve  
travel mm : 6.02  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 3.59  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1600  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1415

Rack travel in mm : 12.15  
Tolerance mm :  $\pm$  2.03

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 296.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1312  
Tolerance 1/min :  $\pm$  15

rack travel mm : -9.10  
Rated speed rpm : 1440

Tolerance 1/min : + 5  
 rack travel mm : -12.60  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1550

#### LOW IDLE

control lever  
 position degree : 245.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : -8.30  
 Tolerance mm : + 0.10

Rated speed rpm : 200  
 CRT mm min. : < -7.50  
 Rated speed rpm : 400

#### TORQUE CONTROL

Rated speed rpm : 1250  
 Rated speed rpm : 850  
 rack travel mm : -1.85  
 Tolerance mm : + 0.15

Rated speed rpm : 350  
 rack travel mm : -1.60  
 Tolerance mm : + 0.30

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000  
 Pressure hPa : 1000  
 rack travel mm : -1.40

Pressure hPa : -  
 Rated speed rpm : 1000  
 rack travel mm : -3.40  
 Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1000

N04

Pressure hPa : 240  
 rack travel mm : -2.55  
 Tolerance mm : + 0.10

Pressure hPa : 320  
 rack travel mm : -1.80  
 Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 175  
 Rated speed rpm : < 240

Check  
 speed 1/min : > 155  
 Check  
 speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1000  
 Rated speed rpm : 850  
 Del. quantity  
 cm3/1000 strokes : 141.0  
 Tolerance  
 cm3/1000 strokes : + 3.0  
 Check tolerance  
 cm3/1000S. : + 6.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 1000  
 Del. quantity  
 cm3/1000 strokes : 127.5  
 Tolerance  
 cm3/1000 strokes : + 1.0  
 Check tolerance  
 cm3/1000S. : + 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm3/1000 strokes : 102.0  
 Tolerance  
 cm3/1000 strokes : + 15.0  
 Check tolerance  
 cm3/1000S. : + 19.0

#### LOW IDLE

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.03.97  
Test oil : ISO 4113

Combination No. : 0 402 046 872

Injection pump  
Pump designation : PES6P120A320RS3337  
EP type number : 0 412 026 770

Governor  
Governor design. : RQV300...1250PA1246K  
Governor no. : 0 421 815 480

Cust. part No. : CCEP 5155A 66-217

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 06-02-26 U4  
Power KW : 111.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 135  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.10  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

\*NW after s.o.d. : 0.08  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery differende

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference ° CS : 2.00

---

#### CRT ZERO POSITION

Rack travel in mm : 10.70  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 1250

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

---

Rack travel in mm : -5.80  
Tolerance mm :  $\pm$  0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1333  
guide sleeve  
travel mm : 10.40  
Tolerance mm :  $\pm$  0.15

---

N07

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.31  
Tolerance mm :  $\pm$  0.20

---

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.50  
Tolerance mm :  $\pm$  0.25

---

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.77  
Tolerance mm :  $\pm$  0.25

---

Rated speed rpm : 1580  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1400

---

Rack travel in mm : 10.50  
Tolerance mm :  $\pm$  1.50

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 296.0  
tolerance degree :  $\pm$  4.0

---

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1305

---

Tolerance 1/min : + 15  
 rack travel mm : -6.70  
 Rated speed rpm : 1400  
 Tolerance 1/min : + 5  
 rack travel mm : -10.20  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1550

---

#### LOW IDLE

control lever  
 position degree : 242.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : -5.80  
 Tolerance mm : + 0.10

Rated speed rpm : 200  
 CRT mm min. : < -4.80  
 Rated speed rpm : 380

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
 Rated speed rpm : 750  
 rack travel mm : -1.60  
 Tolerance mm : + 0.10

Rated speed rpm : 350  
 rack travel mm : -2.40  
 Tolerance mm : + 0.15

#### Start interlock

Rated speed rpm : > 130  
 Rated speed rpm : < 225

Check  
 speed 1/min : > 110  
 Check  
 speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 750  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 105.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 108.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 15.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 28.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 046 877  
Injection pump  
Pump designation : PES6P120A32GRS3337  
EP type number : 0 412 026 772  
Governor  
Governor design. : RQV300...1250PA1149  
: 2K  
Governor no. : 0 421 815 504  
Cust. part No. : CCEP 5158A 66-218

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 06-02-26 V4  
Power KW : 133.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 084  
Inlet press. bar : 2.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

NO9

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 13.00  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.35  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## Beginning of delivery differende

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 13.00  
Difference ° CS : 2.00

## CRT ZERO POSITION

Rack travel in mm : 12.30  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 1250

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : -7.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1311  
guide sleeve  
travel mm : 9.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.31  
Tolerance mm :  $\pm$  0.20

N10

Rated speed rpm : 868  
guide sleeve  
travel mm : 5.97  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 3.59  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1600  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1400

Rack travel in mm : 11.60  
Tolerance mm :  $\pm$  2.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 298.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1320  
Tolerance 1/min :  $\pm$  15

rack travel mm : -8.30  
Rated speed rpm : 1440

Tolerance 1/min : + 5  
rack travel mm : -11.80  
Tolerance mm : + 0.50  
Rated speed rpm : 1550

---

#### LOW IDLE

control lever  
position degree : 242.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -7.80  
Tolerance mm : + 0.10

Rated speed rpm : 200  
CRT mm min. : < 6.80

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 850  
rack travel mm : -1.40  
Tolerance mm : + 0.15

Rated speed rpm : 350  
rack travel mm : -1.90  
Tolerance mm : + 0.30

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1000

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : -2.35  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 180  
rack travel mm : -1.95  
Tolerance mm : + 0.10

Pressure hPa : 240  
rack travel mm : -1.50  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 175  
Rated speed rpm : < 240

Check  
speed 1/min : > 155  
Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.03.97  
Test oil : ISO 4113

Combination No. : 0 402 074 700B

Injection pump  
Pump designation : PES4P110B720RS3383  
EP type number : 0 412 014 701

Governor  
Governor design. : RSV300...1100P1A667  
Governor no. : 0 421 833 582

Cust. part No. : 9279831

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 924 TI-E A2  
Power KW : 147.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 207.0  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : G-90-180-270  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

---

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 400

Rack travel in mm : 4.00

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3

governor spring  
pre-tension  
click setting x : 4.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure  
hPa : 1420

Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
position degree : 106.0

tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 12.00

Rated speed rpm : 1040

Tolerance 1/min : + 5

Tolerance mm : + 0.55

rack travel mm : 4.00

Rated speed rpm : 1095

---

LOW IDLE

control lever  
position degree : 78.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 3.80

Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 4.00

Tolerance mm : + 0.10

---

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 13.00

Tolerance mm : + 0.05

Rated speed rpm : 500

rack travel mm : 13.00

Tolerance mm : + 0.10

Rated speed rpm : 700

rack travel mm : 13.00

Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 550  
Pressure hPa : 1420  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 550  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 550  
  
Pressure hPa : 910  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 780  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.10

Start inter lock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1420  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 214.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1420  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 550

Del. quantity  
cm<sup>3</sup>/1000 strokes : 177.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 076 748L

Injection pump  
Pump designation : PES6P110A720RS3305  
EP type number : 0 412 016 742

Governor  
Governor design. : RSV300...1100P1A555  
Governor no. : 0 421 833 379

Cust. part No. : 9271056

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 926 TI-E A2  
Power KW : 210.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 207.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

#### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 450

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.5

#### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### (8) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1120

Del. quantity  
cm<sup>3</sup>/1000 strokes : 186.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

#### Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### CONTROL LEVER

control lever  
position degree : 103.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 12.00  
Rated speed rpm : 940

Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1000

rack travel mm : 4.00  
Rated speed rpm : 1025

##### LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 450  
rack travel mm : 3.30  
Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 450  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

##### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 13.00  
Tolerance mm : ± 0.10

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1120  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 675  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1120  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 076 776A

Injection pump  
Pump designation : PES6P110A720RS3305  
EP type number : 0 412 016 750

Governor  
Governor design. : RSV300...1100P1A598  
Governor no. : 0 421 833 473

Cust. part No. : 9278136

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 926 TI  
Power KW : 172.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 207.0  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.20  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.5

#### Speed

Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.80

Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 13.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 5.5

#### Speed

Tolerance  
cm3/1000 strokes : 4.5

Check tolerance  
cm3/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3

governor spring  
pre-tension  
click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 156.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 3.5

Speed  
Tolerance  
cm3/1000 strokes : 4.0  
Check tolerance  
cm3/1000S. : 7.5

##### CONTROL LEVER

control lever  
position degree : 97.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 9.30  
Rated speed rpm : 940  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 975  
Tolerance 1/min : + 15

rack travel mm : 4.00  
Rated speed rpm : 985

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 4.30  
Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 400  
rack travel mm : 4.80  
Tolerance mm : + 0.10

##### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 10.30  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 10.30  
Tolerance mm : + 0.10

Rated speed rpm : 700

rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.10

Start interlock

End of test specification sheet

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 646 785

Injection pump  
Pump designation : PE6P120A320LS7869  
EP type number : 0 412 626 887

Governor  
Governor design. : RQV300...1050PA1078K  
Governor no. : 0 421 815 359

Cust. part No. : 9275445

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 9406 TI  
Power KW : 300.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 165  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 291.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117  
guide sleeve  
travel mm : 10.38  
Tolerance mm : ± 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.69  
Tolerance mm : ± 0.25

Rated speed rpm : 746  
guide sleeve  
travel mm : 6.20  
Tolerance mm : ± 0.25

Rated speed rpm : 353  
guide sleeve  
travel mm : 2.45  
Tolerance mm : ± 0.25

Rated speed rpm : 403  
guide sleeve  
travel mm : 3.18  
Tolerance mm : ± 0.25

Rated speed rpm : 450

guide sleeve  
travel mm : 3.66  
Tolerance mm : ± 0.25

Rated speed rpm : 1320  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1185

Rack travel in mm : 10.80  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 291.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.30  
Rated speed rpm : 1110  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : ± 15

Rated speed rpm : 1220

---

#### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.00

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1550  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 1050  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 670  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 600  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.10

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1550  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 281.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1550  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 301.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.90

Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

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End of test specification sheet